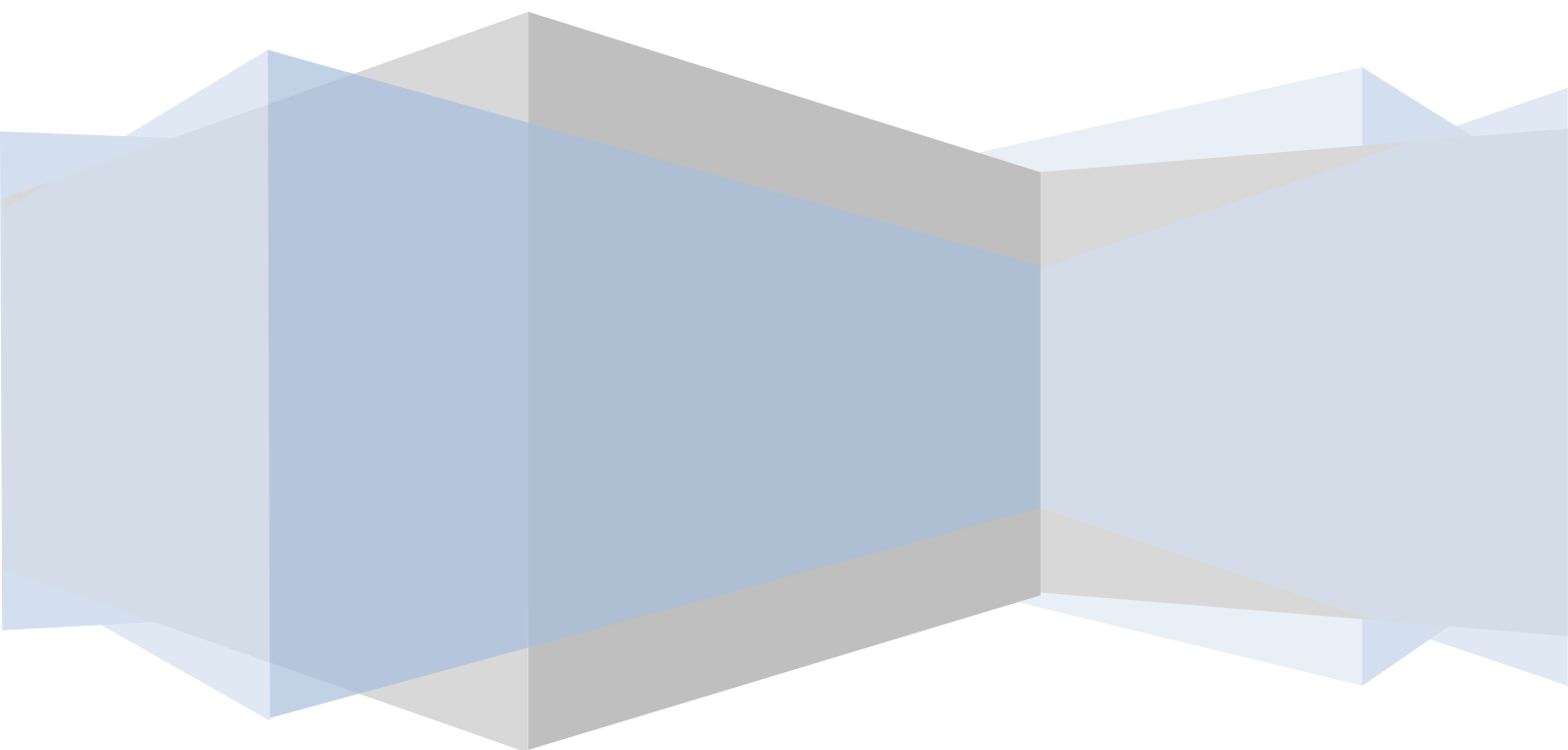


MyNAS® Storage Appliance Administration Guide

Release 1.3 (Yarra)

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Preface

Welcome to the MyNAS® Storage Appliance Installation Guide. This guide will help you getting "up and running" with MyNAS on your hardware, and assisting with initial configuration of MyNAS Release 1.3 (Yarra).

Why use MyNAS?

Ask yourself this question: Where do I store all my important digital assets today – assets such as photos, videos, taxation documents, school projects or assignments, work documents, email?

In today's society, it is fairly rare to not have some form of a digital footprint – from taking photos to Facebook, email, typing up that essay for class or a project such as tracing family history – we all create some form of digital data that is saved on our computer.

It was not that long ago that content such as student assignments or documents we created were stored on the good old floppy disks – and saved many times to different disks as a backup. We did this as it was common for our main disk to fail – right when we need it the most (Murphy's Law). Technology has significantly improved since then, and our reliance on multiple backups such as to disks has reduced – however computers are not immune to failure – malware, virus' all plague us today in one shape or another.

So back to the question – where do you store all your important digital data? On your laptop, on your desktop, on your portable drive? What happens if any one of those fail? Will you lose all your data – potentially. What happens if it gets lost, damaged (fire, water), stolen?

MyNAS integrates the ZFS filesystem into an easy to use platform for the storage of your important digital content. The benefits of ZFS include protection against data corruption, support for high storage capacities, integration of the concepts of filesystem and volume management, snapshots and copy-on-write clones, continuous integrity checking and automatic repair - off of which are highly important in today's digital age to safeguard and protect your data.

MyNAS provides you a solution to store all your important data in a robust manner utilising enterprise technology – providing a secure, robust and scalable platform for you to safeguard your digital data. By employing cloud services for the most important data, you can be rest assured that your important digital data is safe.

Understanding ZFS Pools

A ZFS pool, once created as a specific type or member size, cannot be changed without destroying that ZFS pool. It can however, be added to. For example:

- Today in my system I have 5 available drives for a ZFS pool. I create a ZFS raidz using all five drives and I call this pool name "green":

```
enable# show zpool list
NAME      SIZE  ALLOC   FREE      CAP  DEDUP  HEALTH  ALTROOT
green     199G   984M   198G       0%  6.12x  ONLINE   -

enable# show zpool status
pool: green
state: ONLINE
scan: none requested
config:

    NAME            STATE        READ WRITE CKSUM
    green            ONLINE         0     0     0
      raidz1-0       ONLINE         0     0     0
        disk_sdc     ONLINE         0     0     0
        disk_sdd     ONLINE         0     0     0
        disk_sde     ONLINE         0     0     0
        disk_sdf     ONLINE         0     0     0
        disk_sdg     ONLINE         0     0     0

errors: No known data errors
```

- Tomorrow I add another 5 drives to my system. I can add this to the original ZFS pool expanding its overall size:

```
enable# show zpool list
NAME      SIZE  ALLOC   FREE      CAP  DEDUP  HEALTH  ALTROOT
green     398G   984M   397G       0%  6.12x  ONLINE   -

enable# show zpool status
pool: green
state: ONLINE
scan: none requested
config:

    NAME            STATE        READ WRITE CKSUM
    green            ONLINE         0     0     0
      raidz1-0       ONLINE         0     0     0
        disk_sdc     ONLINE         0     0     0
        disk_sdd     ONLINE         0     0     0
        disk_sde     ONLINE         0     0     0
        disk_sdf     ONLINE         0     0     0
        disk_sdg     ONLINE         0     0     0
      raidz1-1       ONLINE         0     0     0
        disk_sdh     ONLINE         0     0     0
        disk_sdi     ONLINE         0     0     0
        disk_sdj     ONLINE         0     0     0
        disk_sdk     ONLINE         0     0     0
        disk_sdl     ONLINE         0     0     0

errors: No known data errors
enable#
```

- I just as easily could have created a new ZFS pool with the new drives, or added them in a different configuration as my requirements dictate.

What I am unable to do however is add the new 5 disks to the original raidz1-0 configuration. If I wanted to do that, I would have to destroy the original configuration to re-create the configuration with all 10 disks.

For further details and information surrounding ZFS and its best practices, refer to the following online resource:

http://www.solarisinternals.com/wiki/index.php/ZFS_Best_Practices_Guide

ZFS Pools with MyNAS® Storage Appliance

In order to use MyNAS Storage Appliance, a ZFS pool needs to be created utilising the disks assigned through the Configuration Wizard.

Understanding ZFS Pool Types

ZFS provides a number of options as to how to store your data. These options are highlighted below. It is important to understand what each ZFS pool type is, and what protection it provides in order to select the right ZFS pool type for your data.

ZFS 2-Way Mirror

A ZFS 2-Way mirror is akin to a traditional RAID1 solution where the disks mirror the data, so that each drive has an exact copy of all data.

The resiliency of this solution is that if one drive fails, the data is still available.

If a drive in the mirror does fail, mirrors are also quicker (than raidz) to return to a healthy state when the drive is replaced (resilver).

ZFS 3-Way Mirror

Similar to a ZFS 2-Way mirror, however the data is now mirrored amongst 3 drives.

The resiliency of this solution is that 2 drives can fail and the data will still be available.

If a drive in the mirror does fail, mirrors are also quicker (than raidz) to return to a healthy state when the drive is replaced (resilver).

ZFS Raidz 1

A ZFS Raidz-1 Pool is akin to a traditional RAID5 solution, except that there is no RAID5 write-hole¹ when using ZFS.

The resiliency of this solution is that a single drive can fail and the data will still be available.

If a drive in the pool does fail, it will take time to recalculate and resilver the lost data. During that time, should another drive fail, the data in that ZFS pool could be lost.

ZFS Raidz 2

A ZFS Raidz-2 Pool is akin to a traditional RAID6 solution, except that there is no RAID6 write-hole when using ZFS.

The resiliency of this solution is that two drives can fail and the data will still be available.

If a drive in the pool does fail, it will take time to recalculate and resilver the lost data. During that time, should another drive fail, the data in that pool will not be lost (like Raidz-1) and still recoverable.

ZFS Raidz 3

A ZFS Raidz-2 Pool is akin to a traditional RAID6 solution, except that there is no RAID6 write-hole when using ZFS.

The resiliency of this solution is that three drives can fail and the data will still be available.

If a drive in the pool does fail, it will take time to recalculate and resilver the lost data. During that time, should another drive fail, the data in that pool will not be lost (like Raidz-1) and still recoverable.

¹ For further details on RAID5 write-holes refer to <http://www.raid-recovery-guide.com/raid5-write-hole.aspx>

ZFS Pool Type Capacity and Utilisation

The table below details when each ZFS Pool Type option is enabled within MyNAS and the initial ZFS storage space that would be available when selecting a specific ZFS pool type:

ZFS Pool Type	Capacity	Utilisation	Minimum number of disks allocated for ZFS using MyNAS
ZFS 2-Way Mirror	Smallest Drive Size	$((\text{Capacity} / \text{capacity of all drives}) / 100)\%$	2
ZFS 3-Way Mirror	Smallest Drive Size	$((\text{Capacity} / \text{capacity of all drives}) / 100)\%$	3
ZFS Raidz 1	Smallest Drive Size * (number of drives -1)	$((\text{Capacity} / \text{capacity of all drives}) / 100)\%$	4
ZFS Raidz 2	Smallest Drive Size * (number of drives -2)	$((\text{Capacity} / \text{capacity of all drives}) / 100)\%$	6
ZFS Raidz 3	Smallest Drive Size * (number of drives -3)	$((\text{Capacity} / \text{capacity of all drives}) / 100)\%$	7

ZFS Pool Type Capacity and Utilisation Example

The example below details using the above ZFS pool type and the resulting storage space each ZFS pool provides

ZFS Pool Type	Disk Capacity	Minimum number of disks allocated for ZFS using MyNAS	Approximate Available Capacity
ZFS 2-Way Mirror	1TB Disks	2	~1TB
ZFS 3-Way Mirror	1TB Disks	3	~1TB
ZFS Raidz 1	1TB Disks	4	~3TB
ZFS Raidz 2	1TB Disks	6	~4TB
ZFS Raidz 3	1TB Disks	7	~4TB

Understanding ZFS Pool Enhanced Configuration Options

In addition to the ZFS Pool Types, additional enhanced configurations can be created by using MyNAS. These are:

- Adding a ZFS Intent Log (ZIL)
- Adding a ZFS Cache (L2ARC)
- Adding Spare Disks

Understanding ZFS Intent Log (ZIL)

The objective behind the ZFS Intent Log is to provide insurance of writing data to your disks in the event of a power failure - keeping track of what needs to be written to disk even if the power fails. The caveat around this is that the ZIL will only be used by applications that utilise synchronous writes.

For 99.9% of MyNAS Storage Appliance installations, using a ZIL will not provide any benefit. The best ZIL you can have for MyNAS is to deploy an Uninterruptible Power Supply (UPS) to provide that power backup in the event of a power loss situation.

Understanding ZFS Cache (L2ARC)

L2ARC stands for Level 2 Adaptive Replacement Cache, and is utilised as a read cache for the ZFS Pool. Generally, before deploying an L2ARC device, it is best advised to populate your system with as much memory as possible before considering an L2ARC device. With this being said, until you reach 64GB of memory in your system you do not need to consider a dedicated L2ARC device.

Understanding ZFS Spare Disks

ZFS Spare disks provide an immediate online replacement when a disk failure is detected. Consider the following scenario:

```
pool: storage
state: DEGRADED
status: One or more devices are faulted in response to persistent errors.
        Sufficient replicas exist for the pool to continue functioning in a
        degraded state.
action: Replace the faulted device, or use 'zpool clear' to mark the device
        repaired.
scan: scrub repaired 0 in 7h55m with 0 errors on Sun Jun 22 09:55:58 2014
config:
```

NAME	STATE	READ	WRITE	CKSUM
storage	DEGRADED	0	0	0
raidz1-0	DEGRADED	0	0	0
disk_sda	FAULTED	0	162	0
disk_sdc	ONLINE	0	0	0
disk_sdb	ONLINE	0	0	0
disk_sdd	ONLINE	0	0	0

errors: No known data errors

In this situation, without a spare disk, the ZFS pool remains in a DEGRADED state until the FAULTED disk is removed and replaced. This puts the entire ZFS pool at risk, as if a further disk is lost (FAULTED) before the existing FAULTED disk is replaced, the whole ZFS pool will be lost.

If this event (a faulted disk) occurs when there is no human visibility (night time, weekends, holidays) manual intervention is required to replace the FAULTED disk. By having a spare disk available, this becomes an automatic process when the actual event occurs.

In a typical scenario for each type of ZFS Pool Type, you would have the same number of spares as per the table below:

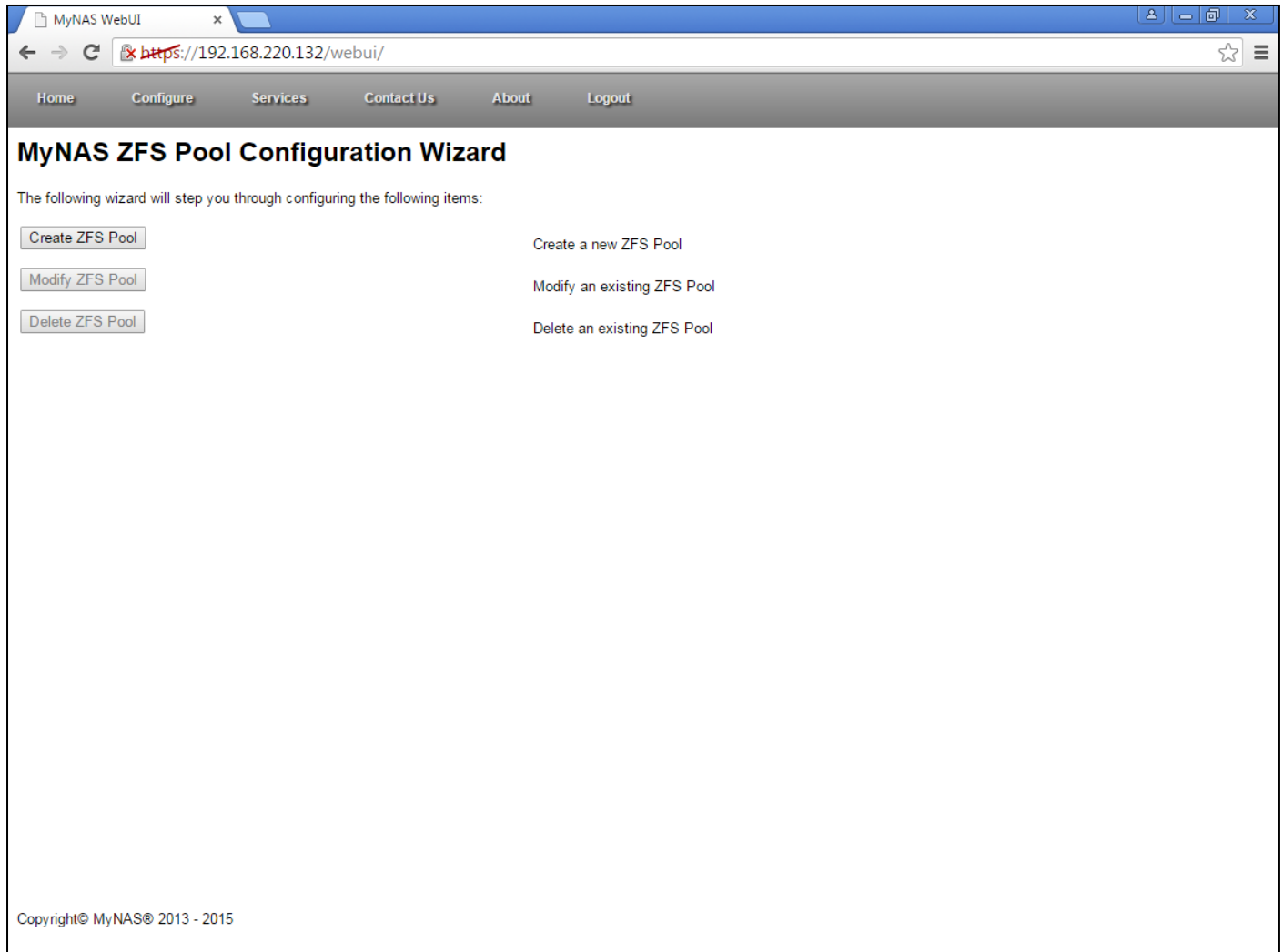
ZFS Pool Type	Suggested number of configured online spares
ZFS 2-Way Mirror	1
ZFS 3-Way Mirror	1
ZFS Raidz 1	1
ZFS Raidz 2	2
ZFS Raidz 3	3

Spare disks also need to be sized correctly. If all your disks in your ZFS pool are 1TB disks, then the spare disks should be same or larger in capacity.

Creating a ZFS Pool on MyNAS Storage Appliance

From the WebUI login page, login as the enable user. Click on the 'Configure' menu bar item, and select 'Configure ZFS Storage' to bring up the ZFS Storage Creation wizard.

When there are no existing ZFS pools, the 'Create ZFS Pool' is the only available option. Once a ZFS pool has been defined, the Modify and Delete buttons are enabled.



To create a ZFS Pool, click the 'Create ZFS Pool' button.

The ZFS pool requires a name, with the following restrictions:

- Only alpha numeric characters
- Special characters cannot be used
- Characters such as '-' (dash) and '_' (underscore) are invalid characters
- ZFS reserved names cannot be used (mirror, raidz, raidz2, raidz3)

MyNAS provides an initial suggestion. Once a ZFS Pool name has been entered, click 'Next'.

MyNAS WebUI

https://192.168.220.132/webui/

Home Configure Services Contact Us About Logout

MyNAS ZFS Pool Configuration Wizard

ZFS Pool Name

The ZFS pool name identifies a group of allocated disks.

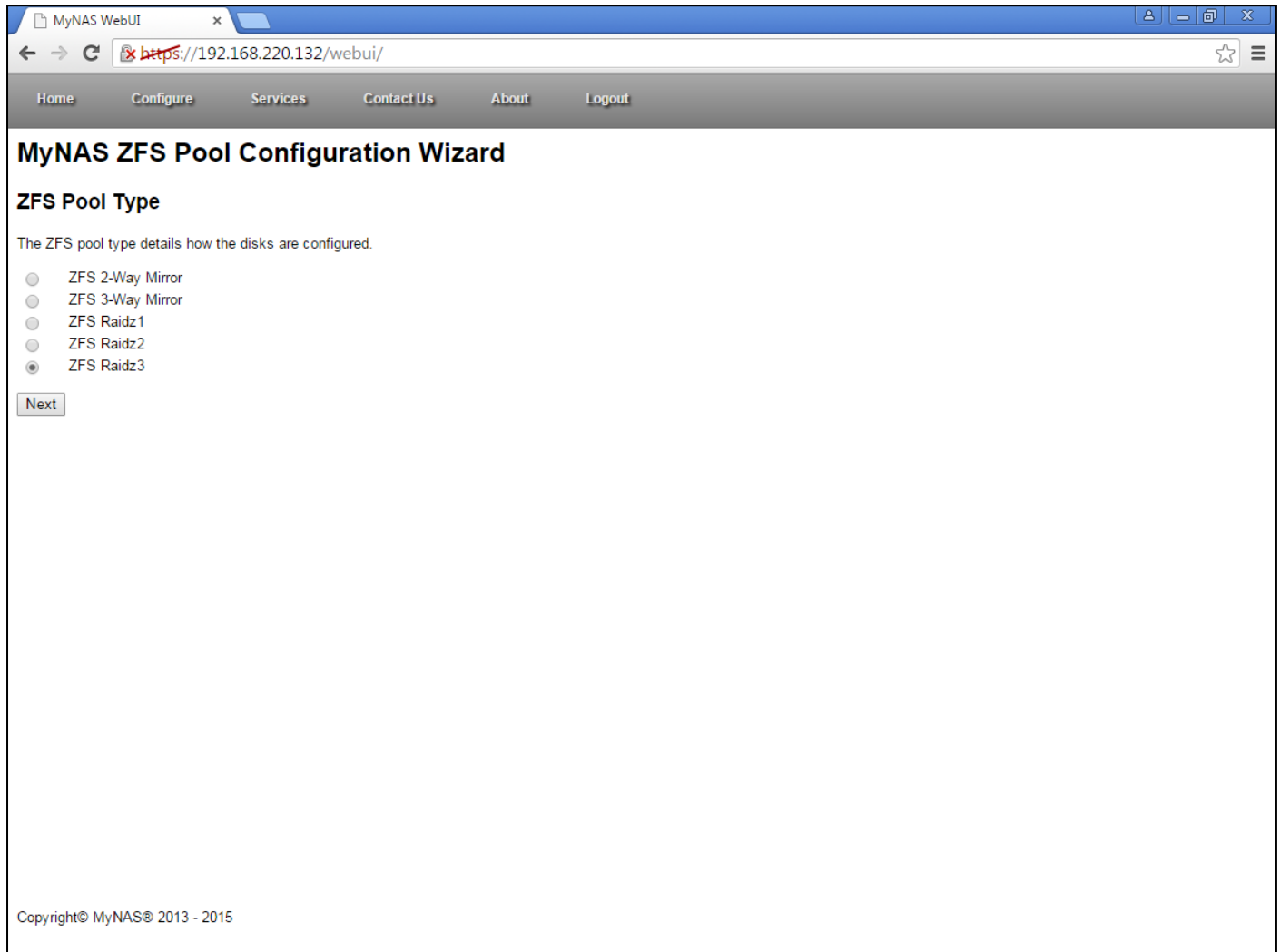
New ZFS Pool Name:

Next

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Select the type of ZFS Pool to be created. The available ZFS Pool types are activated dependant on the number of disks selected for use for ZFS during the Initial Setup Wizard.

Note: To change a ZFS pool type once the pool is created, the pool must be destroyed, which also destroys all data on that ZFS pool.



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser's title bar says "MyNAS WebUI". The page has a navigation menu with links: Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS ZFS Pool Configuration Wizard". Below this is the section "ZFS Pool Type". A descriptive text states: "The ZFS pool type details how the disks are configured." There are five radio button options: "ZFS 2-Way Mirror", "ZFS 3-Way Mirror", "ZFS Raidz1", "ZFS Raidz2", and "ZFS Raidz3". The "ZFS Raidz3" option is selected. A "Next" button is located at the bottom left of the options. At the bottom of the page, the copyright notice "Copyright© MyNAS® 2013 - 2015" is visible.

Select the appropriate ZFS Pool Type for this ZFS Pool.² Once selected, click 'Next' to continue.

² For advice on ZFS Pools, refer to the section titled Understanding ZFS Pool Types

Select all the disks that you wish to use for this ZFS Pool.

Note: If you have disks for advanced functions such as ZFS Intent Log (ZIL), ZFS Cache (L2ARC) or to be used as a spare disk, do not select these disks at this time.

Note: If you are adding a significant number of disks to a single ZFS pool, MyNAS will automatically calculate the most appropriate optimised configuration for the number of disks selected. This optimisation is based on the following guidelines:

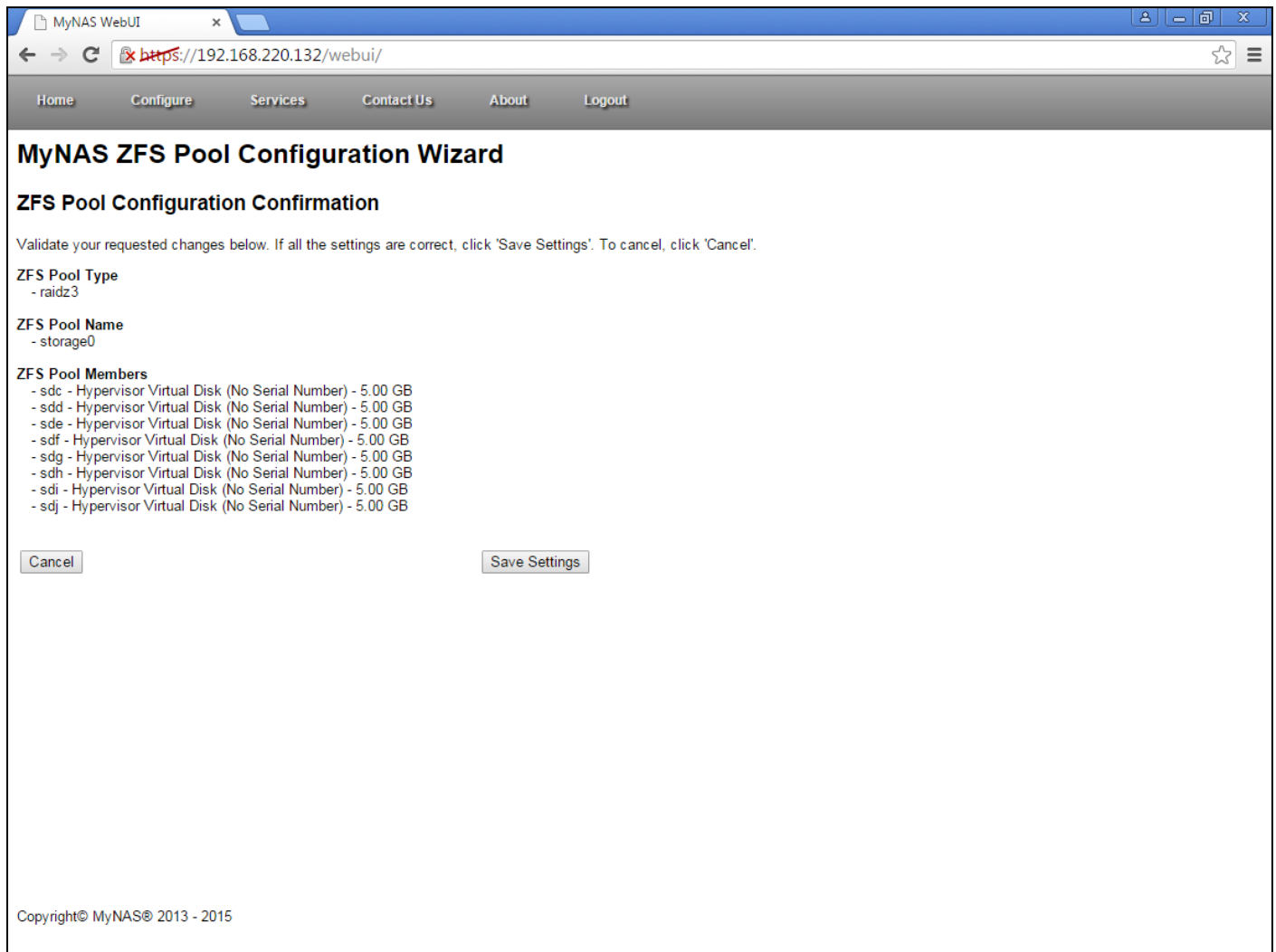
- For raidz1, do not use less than 3 disks, nor more than 7 disks in each vdev
- For raidz2, do not use less than 6 disks, nor more than 10 disks in each vdev
- For raidz3, do not use less than 7 disks, nor more than 15 disks in each vdev

If there are any unused disks after calculating the optimal configuration based on the number of disks and raidz level selected, these will not be used in the ZFS Pool and can be used for another purpose such as a spare disk(s).

The screenshot shows the 'MyNAS ZFS Pool Configuration Wizard' web interface. The browser address bar shows 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS ZFS Pool Configuration Wizard'. Below it is the section 'ZFS Pool Members' with the instruction 'Select the drives to use for your ZFS pool configuration.' There are two columns of disks. The left column, titled 'Available Drives to add to the ZFS pool', contains two entries: 'sdk - Hypervisor Virtual Disk (No Serial Number) - 2.00 GB' and 'sdl - Hypervisor Virtual Disk (No Serial Number) - 2.00 GB'. The right column, titled 'Configured to use for ZFS pool: storage0', contains eight entries: 'sdc - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB', 'sdd - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB', 'sde - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB', 'sdf - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB', 'sdg - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB', 'sdh - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB', 'sdi - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB', and 'sdj - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB'. Between the columns are two buttons: '>' and '<'. At the bottom left is a 'Next' button. The footer text is 'Copyright© MyNAS® 2013 - 2015'.

Once all the appropriate disks are selected, click 'Next' to continue.

MyNAS will now confirm all the changes you have requested for this ZFS Pool creation. If all the settings are correct, click the 'Save Settings' button to create the ZFS pool, or to cancel, click the 'Cancel' button.



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser's tab is labeled 'MyNAS WebUI'. The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled 'MyNAS ZFS Pool Configuration Wizard' and 'ZFS Pool Configuration Confirmation'. Below the title, a message states: 'Validate your requested changes below. If all the settings are correct, click 'Save Settings'. To cancel, click 'Cancel'.'

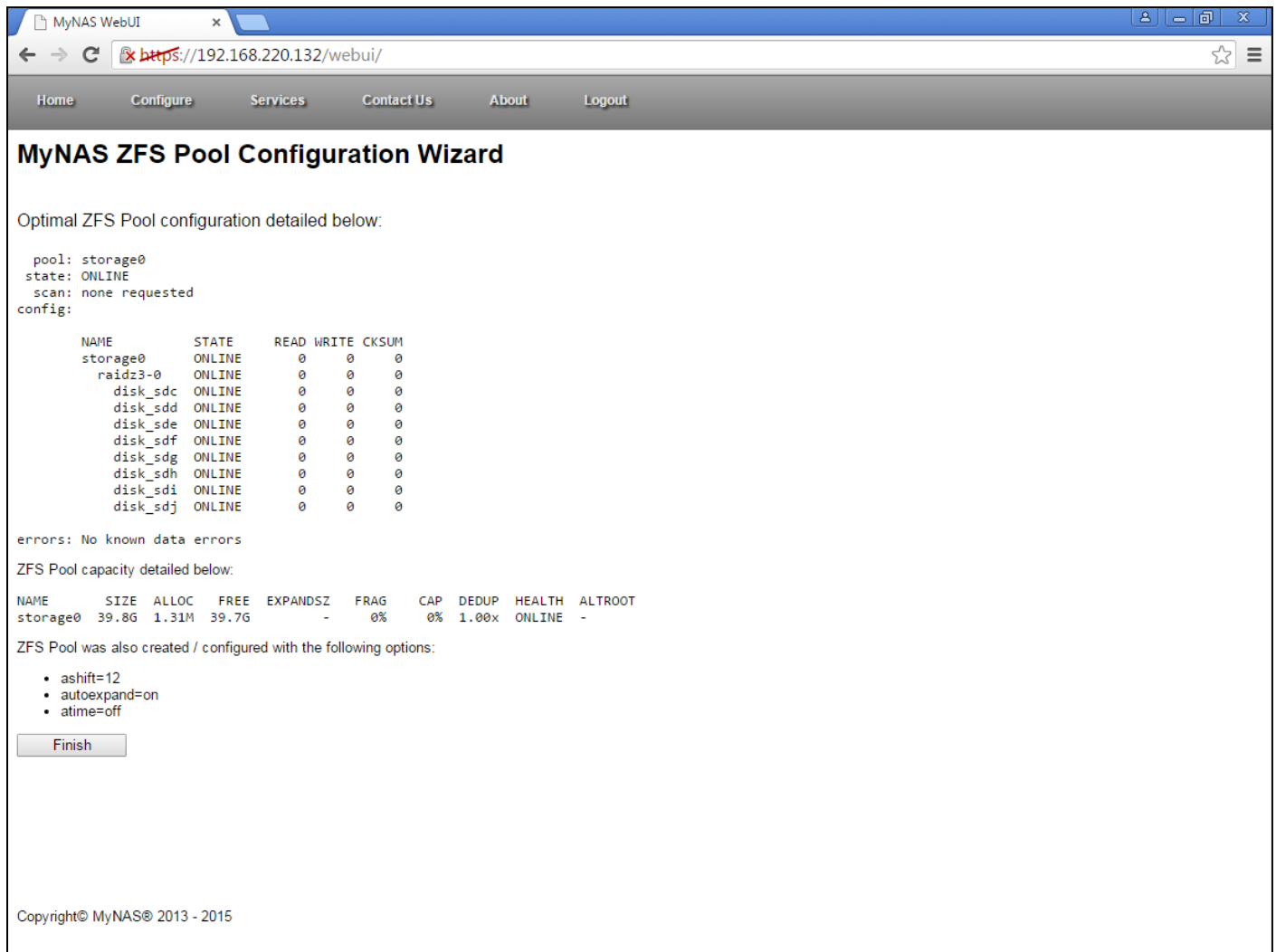
The configuration details are as follows:

- ZFS Pool Type**
 - raidz3
- ZFS Pool Name**
 - storage0
- ZFS Pool Members**
 - sdc - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB
 - sdd - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB
 - sde - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB
 - sdf - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB
 - sdg - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB
 - sdh - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB
 - sdi - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB
 - sdj - Hypervisor Virtual Disk (No Serial Number) - 5.00 GB

At the bottom of the configuration area, there are two buttons: 'Cancel' on the left and 'Save Settings' on the right. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

To continue, click the 'Save Settings' button.

MyNAS will now process the ZFS Pool creation request, and list out the optimal ZFS Pool as created and display the result:



The screenshot shows the MyNAS WebUI interface. The browser address bar displays `https://192.168.220.132/webui/`. The navigation menu includes Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS ZFS Pool Configuration Wizard".

Optimal ZFS Pool configuration detailed below:

```
pool: storage0
state: ONLINE
scan: none requested
config:
```

NAME	STATE	READ	WRITE	CKSUM
storage0	ONLINE	0	0	0
raidz3-0	ONLINE	0	0	0
disk_sdc	ONLINE	0	0	0
disk_sdd	ONLINE	0	0	0
disk_sde	ONLINE	0	0	0
disk_sdf	ONLINE	0	0	0
disk_sdg	ONLINE	0	0	0
disk_sdh	ONLINE	0	0	0
disk_sdi	ONLINE	0	0	0
disk_sdj	ONLINE	0	0	0

errors: No known data errors

ZFS Pool capacity detailed below:

NAME	SIZE	ALLOC	FREE	EXPANDSZ	FRAG	CAP	DEDUP	HEALTH	ALTROOT
storage0	39.8G	1.31M	39.7G	-	0%	0%	1.00x	ONLINE	-

ZFS Pool was also created / configured with the following options:

- ashift=12
- autoexpand=on
- atime=off

Finish

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MyNAS creates the ZFS pool with the following additional options:

- Support for enhanced disk sector sizes (ashift = 12)
- Auto Expand (autoexpand = on)
- Access Time Recording (atime = off)

This allows MyNAS to:

- Use advanced format disks without the requirement to rebuild the ZFS pool
- Automatically expand the ZFS pool when replacing the disks with new, larger disks
- Not record file access time modifications as a speed improvement to MyNAS

In addition to the ZFS pool being created and to help check against issues, two automatic jobs have been scheduled to check the newly created ZFS pool:

- A check every 5 minutes on the zpool status on the configured ZFS pool(s).
- A weekly scrub on the configured ZFS pool(s).

If any issues are discovered during these automatic checks, an email will be sent to the configured system notifications email address. An example of the email contents of when an issue is identified is detailed below:

```
pool: blue
state: DEGRADED
status: One or more devices could not be used because the label is missing or
invalid. Sufficient replicas exist for the pool to continue
functioning in a degraded state.
action: Replace the device using 'zpool replace'.
see: http://zfsonlinux.org/msg/ZFS-8000-4J
scan: scrub repaired 0 in 0h0m with 0 errors on Sat Jun 1 16:56:44 2013
config:
```

NAME	STATE	READ	WRITE	CKSUM
blue	DEGRADED	0	0	0
raidz1-0	DEGRADED	0	0	0
disk_sdc	UNAVAIL	0	0	0
disk_sdd	ONLINE	0	0	0
disk_sde	ONLINE	0	0	0
disk_sdf	ONLINE	0	0	0
disk_sdg	ONLINE	0	0	0

```
errors: No known data errors
```

Click 'Finish' to return to the MyNAS WebUI home page.

The MyNAS Status Dashboard now displays your ZFS Pool status and its storage utilisation for easy reference:

MyNAS WebUI

https://192.168.220.132/webui/

HomeConfigureServicesContact UsAboutLogout

MyNAS Status Dashboard

System Information

Hostname	mynas-doc.localdomain
Version	MyNAS Release 1.3 (Yarra)
Kernel Version	3.14.54-3.el6.x86_64
IP Address	192.168.220.132
DNS Servers	192.168.220.2
Current Date and Time	Wed Oct 21 13:33:06 AEDT 2015
Uptime	0 days 0 hour(s) 53 minutes
Load Average	0.00 0.01 0.05

Hardware Information

Total Processors	1
Model	Intel(R) Core(TM) i7-5600U CPU @ 2.60GHz
CPU Speed	2.59 GHz
Cache Size	4096 KB
System Bogomips	5188.09
System Memory	2003.74 MB
Free Memory	1583.29 MB
System UUID	564DDC64-74A4-4FAC-C4E2-A47E11FC56F6

Storage Device Health

Device Name	Status	Disk Age
/dev/sda	SMART Health Status: OK	N/A
/dev/sdb	SMART Health Status: OK	N/A
/dev/sdc	SMART Health Status: OK	N/A
/dev/sdd	SMART Health Status: OK	N/A
/dev/sde	SMART Health Status: OK	N/A
/dev/sdf	SMART Health Status: OK	N/A
/dev/sdg	SMART Health Status: OK	N/A
/dev/sdh	SMART Health Status: OK	N/A
/dev/sdi	SMART Health Status: OK	N/A
/dev/sdj	SMART Health Status: OK	N/A
/dev/sdk	SMART Health Status: OK	N/A
/dev/sdl	SMART Health Status: OK	N/A

Storage Utilisation

ZFS Pool: storage0

0%

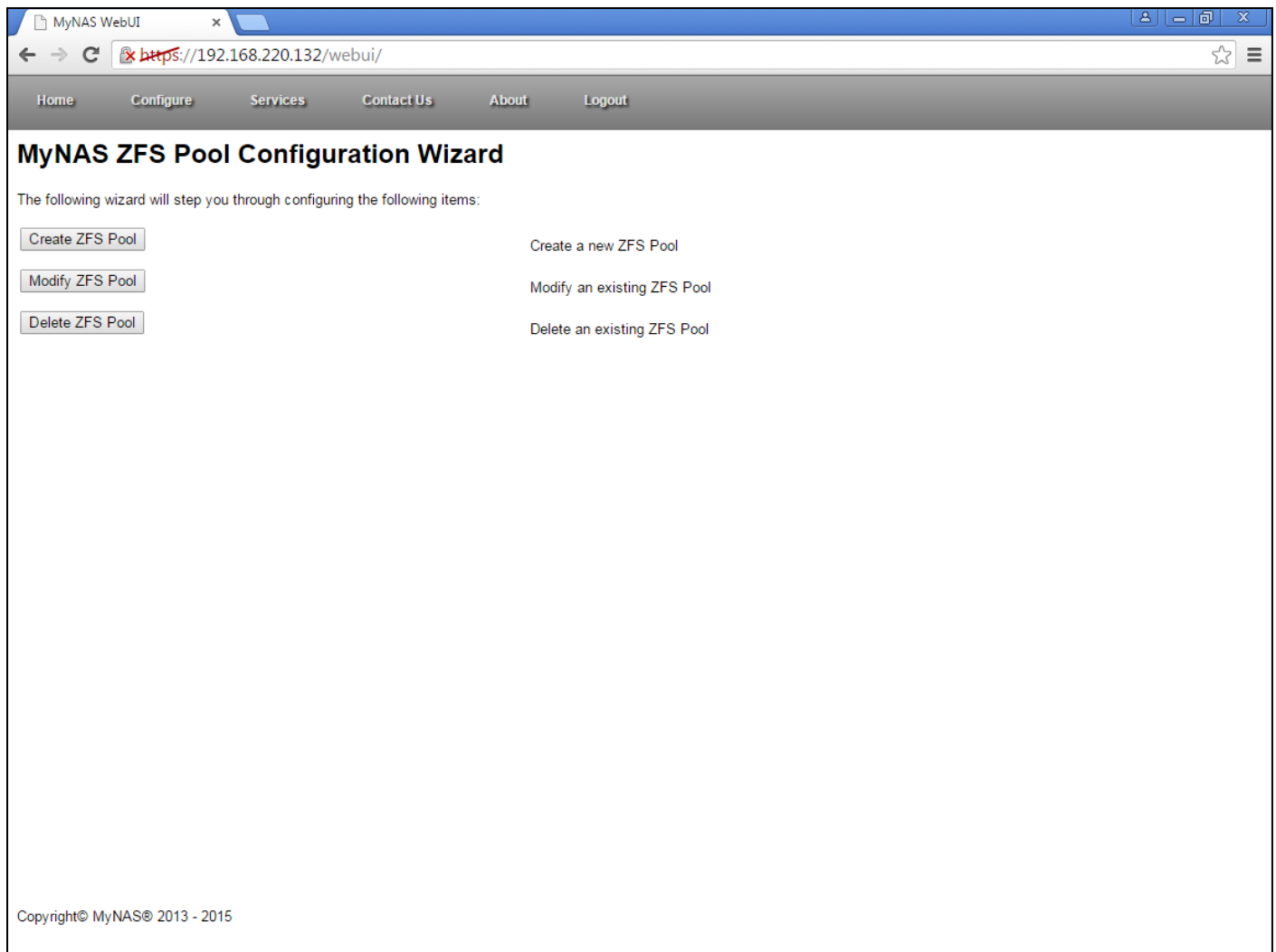
Storage Space Used: 0 GB
Total Space Available: 21.96 GB

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Modifying a ZFS Pool with MyNAS Storage Appliance

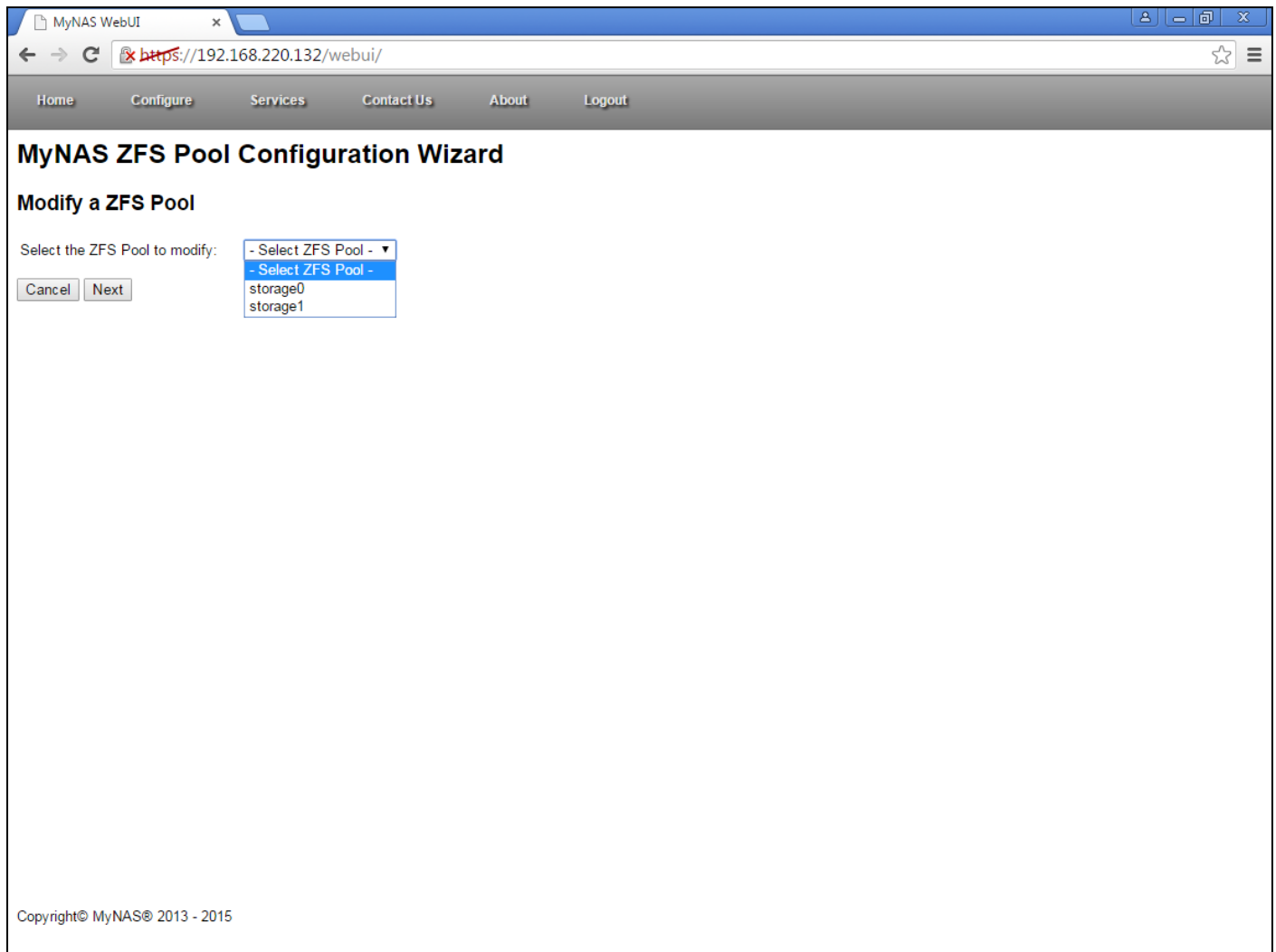
Modifying a ZFS pool allows the configuration of advanced functionality such as appending disks to an existing ZFS pool or adding disks for either ZFS Intent Log, ZFS Cache or ZFS Spare allocations.

From the WebUI login page, login as the enable user. Click on the 'Configure' menu bar item, and select 'Configure ZFS Storage' to bring up the ZFS Storage Creation wizard.



Click the 'Modify ZFS Pool' button to modify an existing ZFS Pool.

If there are more than 1 ZFS storage pool, MyNAS will prompt to select which ZFS storage pool to use for modification:



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled 'MyNAS WebUI'. The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled 'MyNAS ZFS Pool Configuration Wizard' and contains the section 'Modify a ZFS Pool'. Below this section, there is a label 'Select the ZFS Pool to modify:' followed by a dropdown menu. The dropdown menu is open, showing the following options: '- Select ZFS Pool -', '- Select ZFS Pool -', 'storage0', and 'storage1'. Below the dropdown menu are two buttons: 'Cancel' and 'Next'. At the bottom left of the page, there is a copyright notice: 'Copyright© MyNAS® 2013 - 2015'.

If applicable, select the appropriate storage pool and click 'Next'.

Select the modifications which you wish to make.

Note: When appending disks to an existing ZFS Pool, the number of disks selected must match the number of disks originally added. After adding the disks, the only way to release those disks is to destroy the ZFS pool.

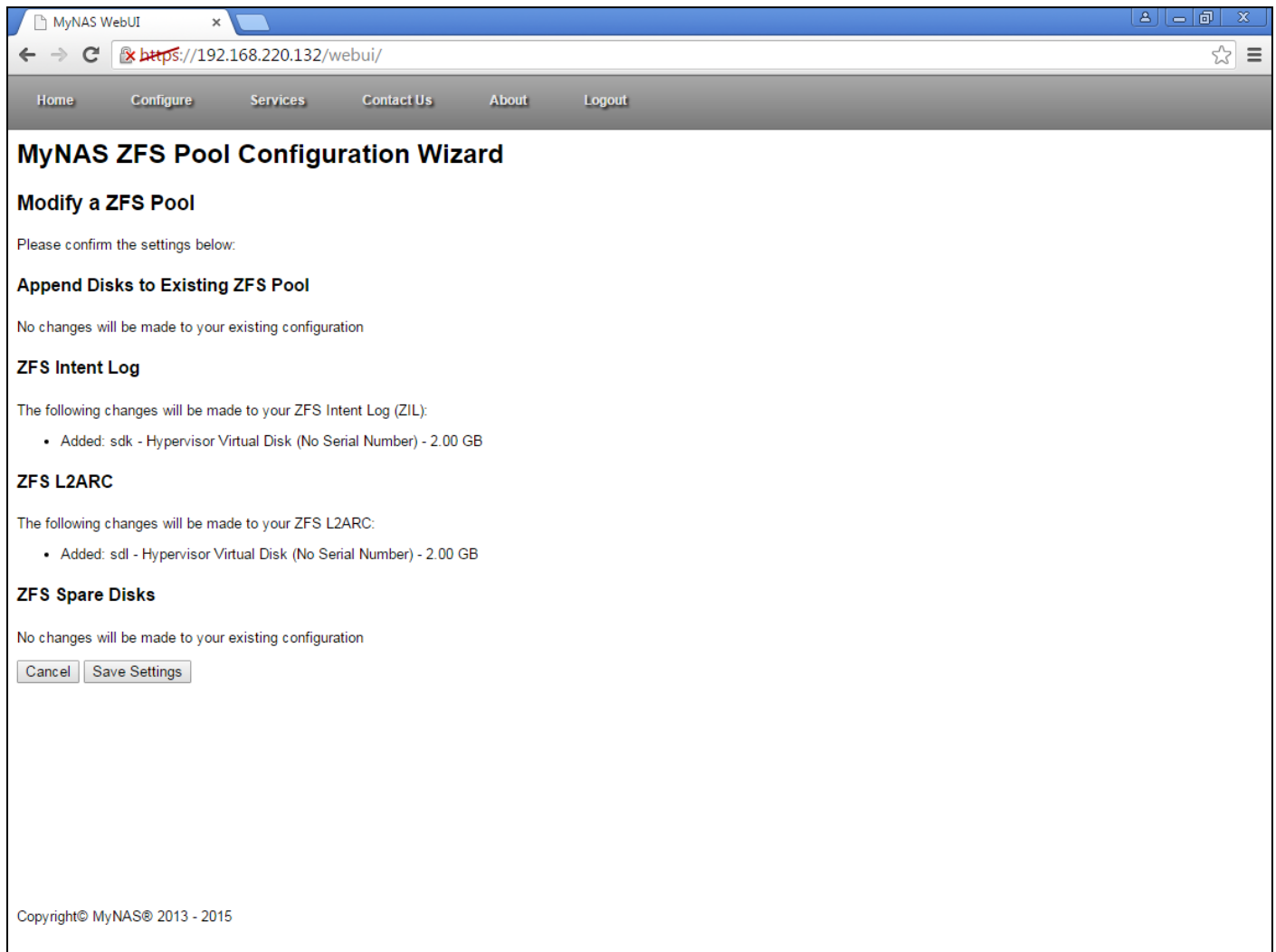
Note: When adding ZFS Intent Log, ZFS Cache or Spare disks, these can be added and removed, swapped around without requiring the destruction of the ZFS Pool.

The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser's title bar says "MyNAS WebUI". The page has a navigation menu with links: Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS ZFS Pool Configuration Wizard". Below this is the section "Modify a ZFS Pool". A sub-instruction reads: "Select the drives to use for your ZFS pool modification." On the left, there is a large, empty box titled "Available Drives to modify ZFS Pool with". At the bottom left of this box is a "Next" button. On the right, under the heading "Modify ZFS Pool: storage0", there is a section "Append to Existing ZFS Pool". This section contains three configuration items, each with a right arrow (>) button on the left and a dropdown menu on the right: 1. "ZFS Intent Log (ZIL)" with a dropdown showing "sdk - Hypervisor Virtual Disk (No Serial Number) - 2.00 GB". 2. "ZFS Cache (L2ARC)" with a dropdown showing "sdl - Hypervisor Virtual Disk (No Serial Number) - 2.00 GB". 3. "ZFS Spare" with an empty dropdown. At the bottom left of the page, the copyright notice "Copyright© MyNAS® 2013 - 2015" is visible.

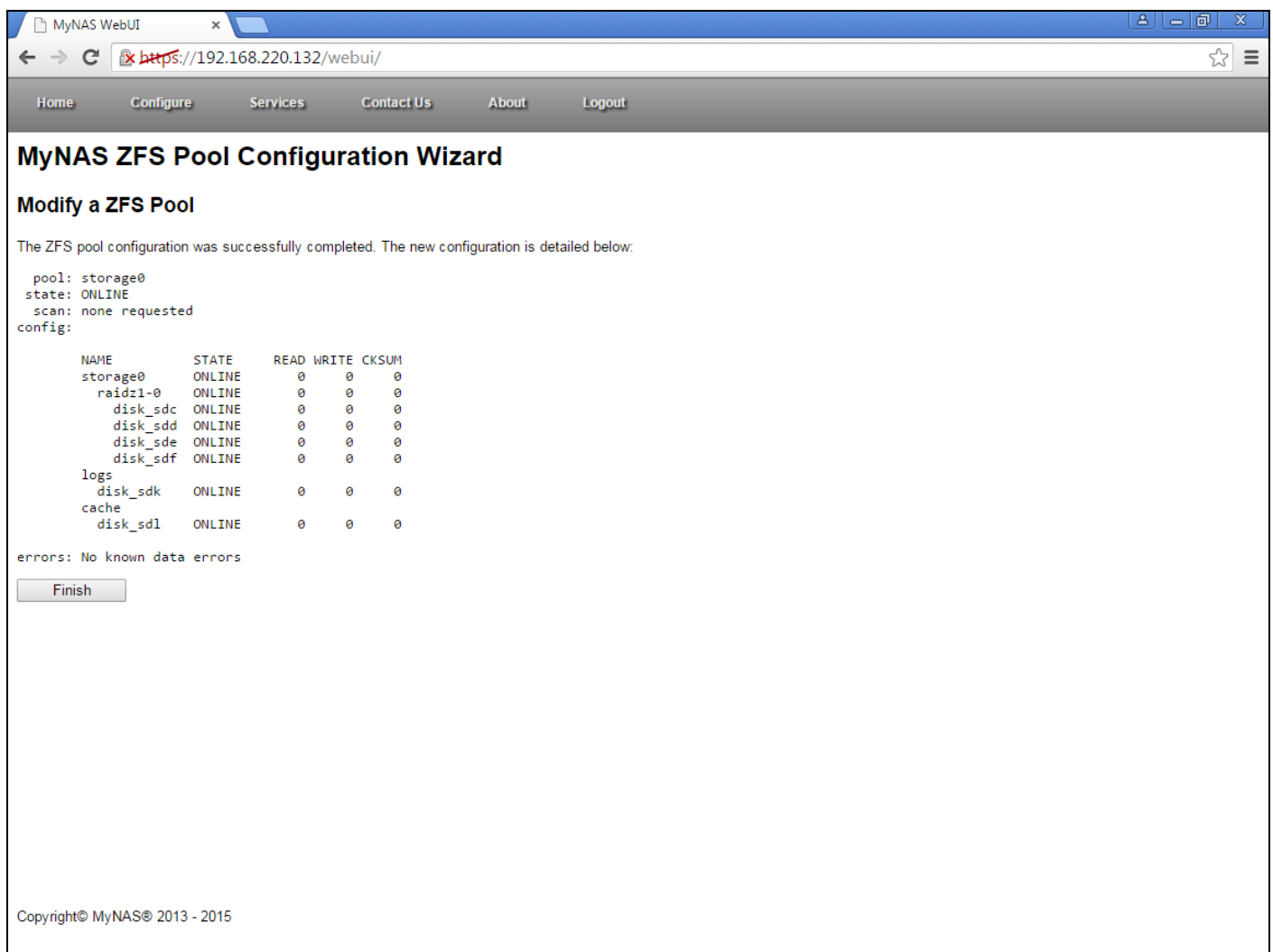
Once the modifications are made, click 'Next' to continue.

Note: When appending to the existing ZFS pool, the number of disks selected need to equal the existing ZFS pool size.

Confirm the settings as selected. If the settings are correct, click 'Save Settings' to activate the selected configuration.



Click 'Finish' to return to the MyNAS WebUI Home page.



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS ZFS Pool Configuration Wizard" and "Modify a ZFS Pool". A message states: "The ZFS pool configuration was successfully completed. The new configuration is detailed below:". Below this, the configuration details are listed:

```
pool: storage0
state: ONLINE
scan: none requested
config:
```

NAME	STATE	READ	WRITE	CKSUM
storage0	ONLINE	0	0	0
raidz1-0	ONLINE	0	0	0
disk_sdc	ONLINE	0	0	0
disk_sdd	ONLINE	0	0	0
disk_sde	ONLINE	0	0	0
disk_sdf	ONLINE	0	0	0
logs				
disk_sdk	ONLINE	0	0	0
cache				
disk_sdl	ONLINE	0	0	0

errors: No known data errors

A "Finish" button is located at the bottom left of the configuration details.

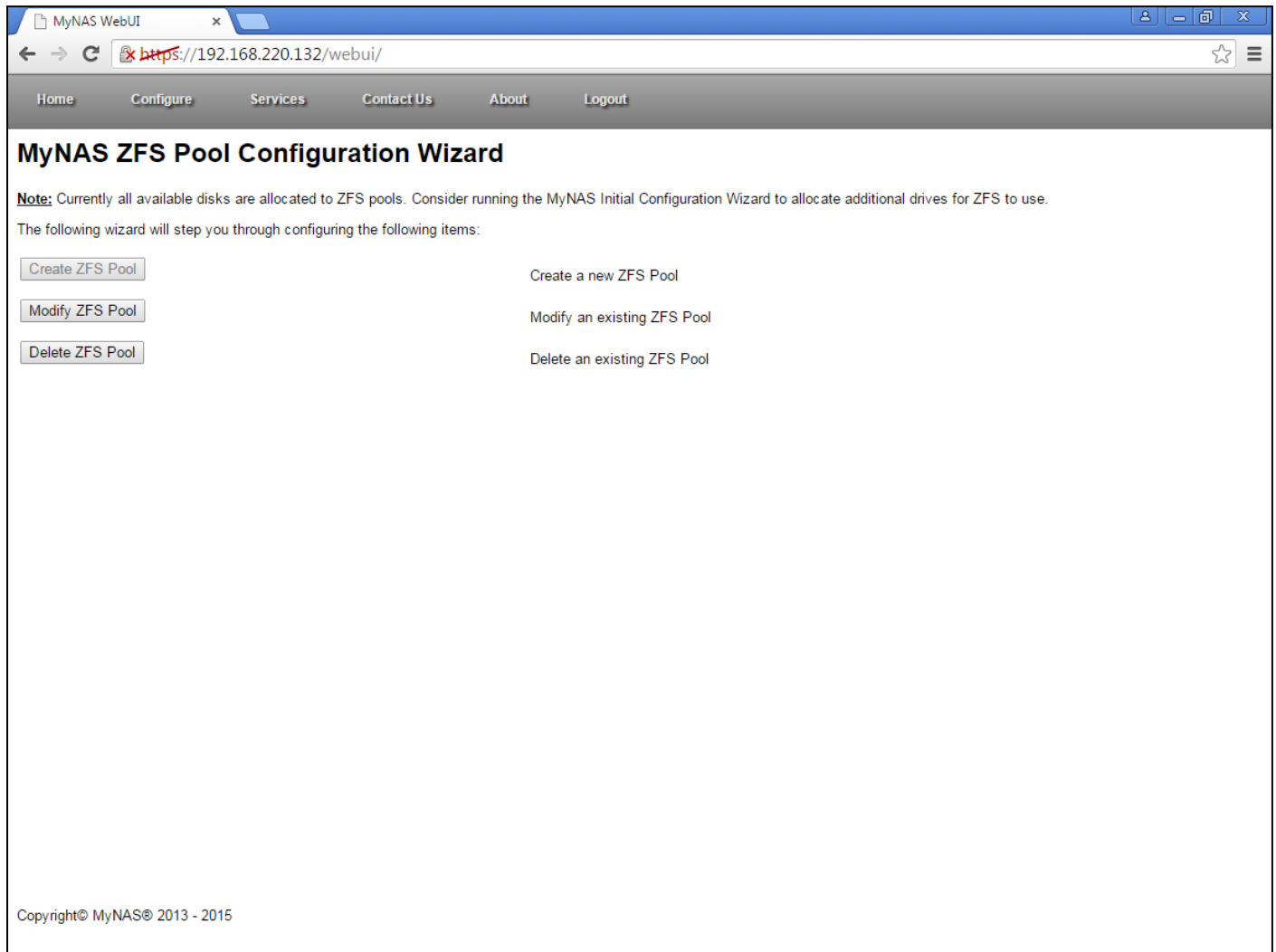
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The ZFS Pool modifications are now complete for that selected ZFS Pool.

Deleting a ZFS Pool with MyNAS Storage Appliance

Deleting a ZFS pool is a destructive process. It will remove all data on the disks associated with the ZFS pool. If this action is undertaken by accident, in order to recover any data you may have to consult with data recovery specialists.

From the WebUI login page, login as the enable user. Click on the 'Configure' menu bar item, and select 'Configure ZFS Storage' to bring up the ZFS Pool Configuration wizard.



Click the 'Delete ZFS Pool' button to modify an existing ZFS Pool.

If there are more than 1 ZFS storage pool, MyNAS will prompt to select which ZFS storage pool to delete.

The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS ZFS Pool Configuration Wizard'. Below this, the section is titled 'Delete a ZFS Pool'. The instruction 'Select the ZFS Pool to delete:' is followed by a dropdown menu. The dropdown is open, showing the following options: '- Select ZFS Pool -', '- Select ZFS Pool -', 'storage0', and 'storage1'. A 'Next' button is located to the left of the dropdown menu. At the bottom left of the page, the copyright notice 'Copyright© MyNAS® 2013 - 2015' is visible.

MyNAS WebUI x

← → ↻ ~~https://~~192.168.220.132/webui/ ☆ ≡

Home Configure Services Contact Us About Logout

MyNAS ZFS Pool Configuration Wizard

Delete a ZFS Pool

Select the ZFS Pool to delete:

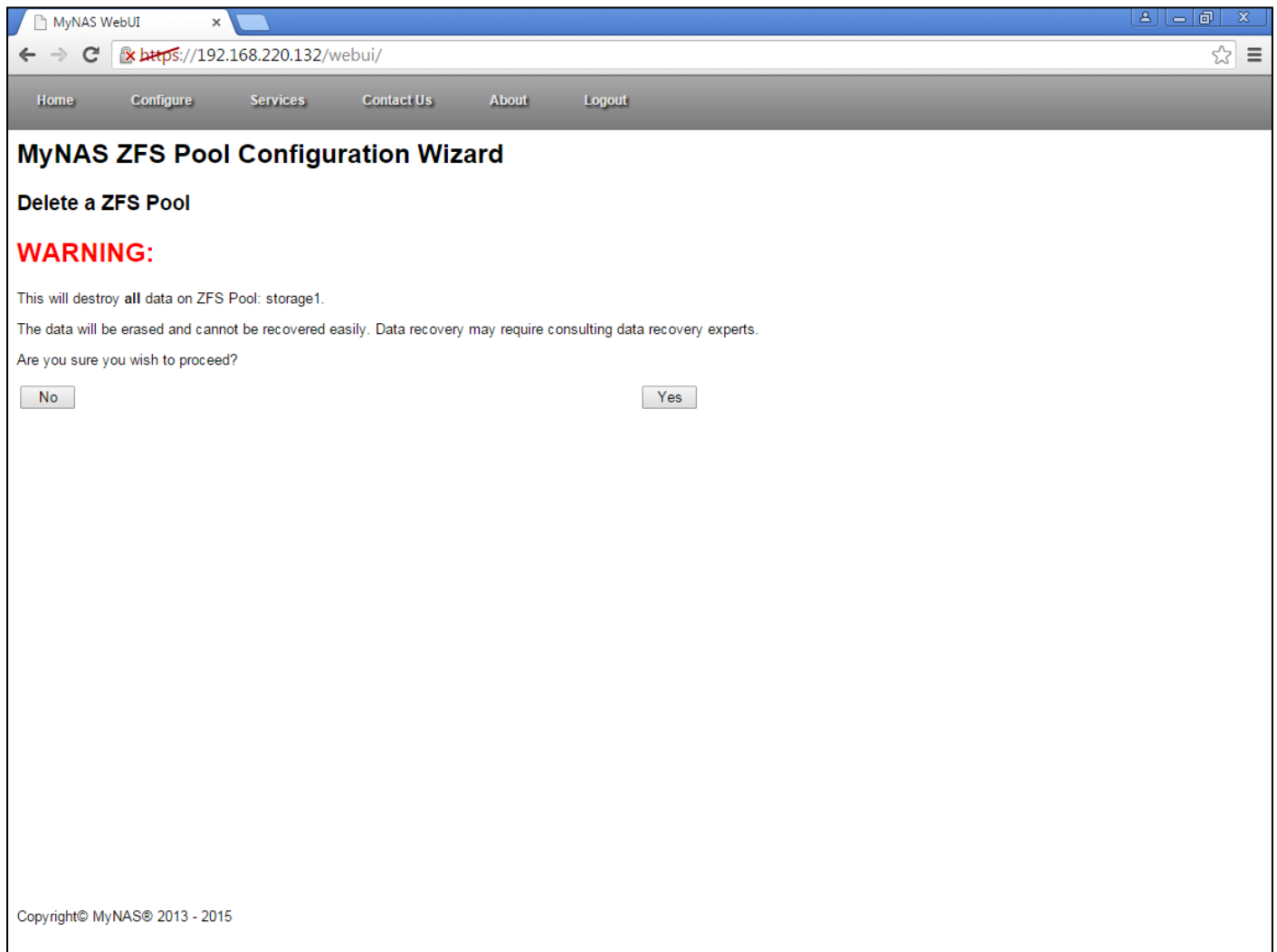
Next

- Select ZFS Pool - ▾
- Select ZFS Pool -
- storage0
- storage1

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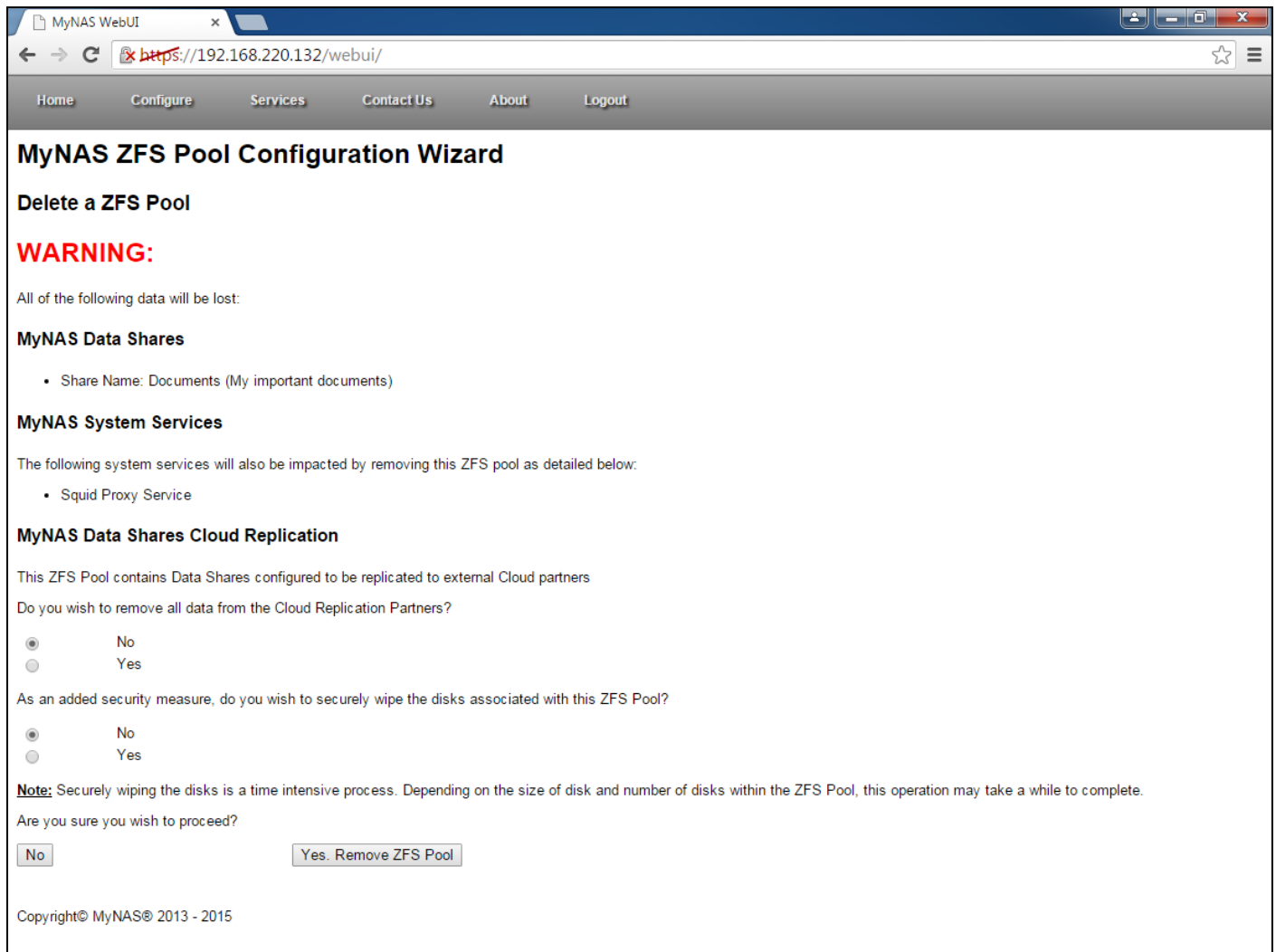
If applicable, select the appropriate storage pool and click 'Next'.

MyNAS will now warn you in regards to the action you're currently undertaking:



If you are sure of the action, click 'Yes' to proceed.

My NAS will now display all impacted data when the ZFS Pool will be removed. This helps prevent any accidental removal of a ZFS Pool:



MyNAS WebUI

Home Configure Services Contact Us About Logout

MyNAS ZFS Pool Configuration Wizard

Delete a ZFS Pool

WARNING:

All of the following data will be lost:

MyNAS Data Shares

- Share Name: Documents (My important documents)

MyNAS System Services

The following system services will also be impacted by removing this ZFS pool as detailed below:

- Squid Proxy Service

MyNAS Data Shares Cloud Replication

This ZFS Pool contains Data Shares configured to be replicated to external Cloud partners

Do you wish to remove all data from the Cloud Replication Partners?

☒ No
☐ Yes

As an added security measure, do you wish to securely wipe the disks associated with this ZFS Pool?

☒ No
☐ Yes

Note: Securely wiping the disks is a time intensive process. Depending on the size of disk and number of disks within the ZFS Pool, this operation may take a while to complete.

Are you sure you wish to proceed?

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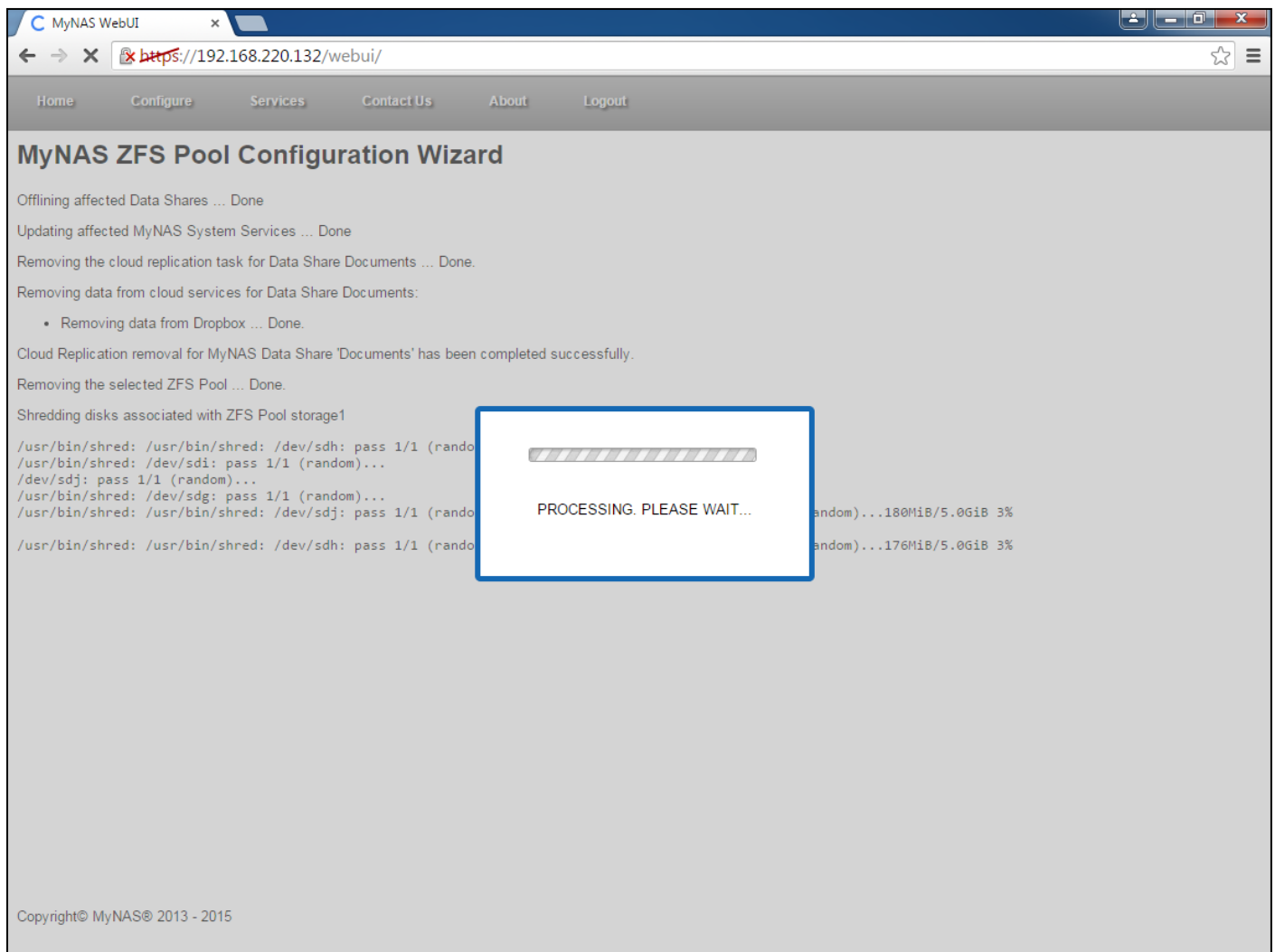
If any Data Share using this ZFS pool is configured to perform Cloud Replication, MyNAS will ask if you want to remove the data from all applicable Cloud Replication Partners. Click yes to perform this operation.

MyNAS also provides the option to securely erase the disks associated with this ZFS pool. Click yes to also perform this operation.

Note: The secure erase operation is a disk and time intensive process. Allow adequate time for the erase process to complete.

Clicking on the "Yes. Remove ZFS Pool" button will perform any addition actions selected and remove the selected ZFS pool.

The following will be displayed during the ZFS pool removal when securely erasing the disks is selected:





Using your MyNAS® Storage Appliance

There are a number of ways in which your MyNAS storage appliance can be used. The most common ways of using MyNAS are follows:

- Creating a Data Share for storing and sharing files from Windows, Apple OS X and Linux
- Configuring an iSCSI Target and mounting the iSCSI target in Windows or Linux

Additionally, MyNAS has the following capabilities:

- Protect your data by encrypting the data at rest
- Act as an Active Directory Server for Small to Medium Businesses
- Utilise local accounts or Active Directory authentication to protect access to your data
- Act as a local Web Proxy Server
- Act as a DLNA Server for DLNA Enabled TV's
- Act as a BitTorrent Client using Transmission
- Act as a central database for XBMC
- Act as a Virtualisation Platform utilising the XEN Linux virtualisation project

In all of these instances, any of your important data is now backed by ZFS providing integrity checking of any data you store on your MyNAS Storage Appliance.

Using Data Shares on MyNAS® Storage Appliance

Data Shares provide the capability to use your MyNAS storage appliance on your network as a file server so that you can:

- Share data between Windows, Linux or Apple OS X systems
 - Store additional copies for data integrity based on how you rate your data importance
 - Implement snapshots to protect your data
 - Encrypt your data at rest
- Share out the data via DLNA to other digital devices

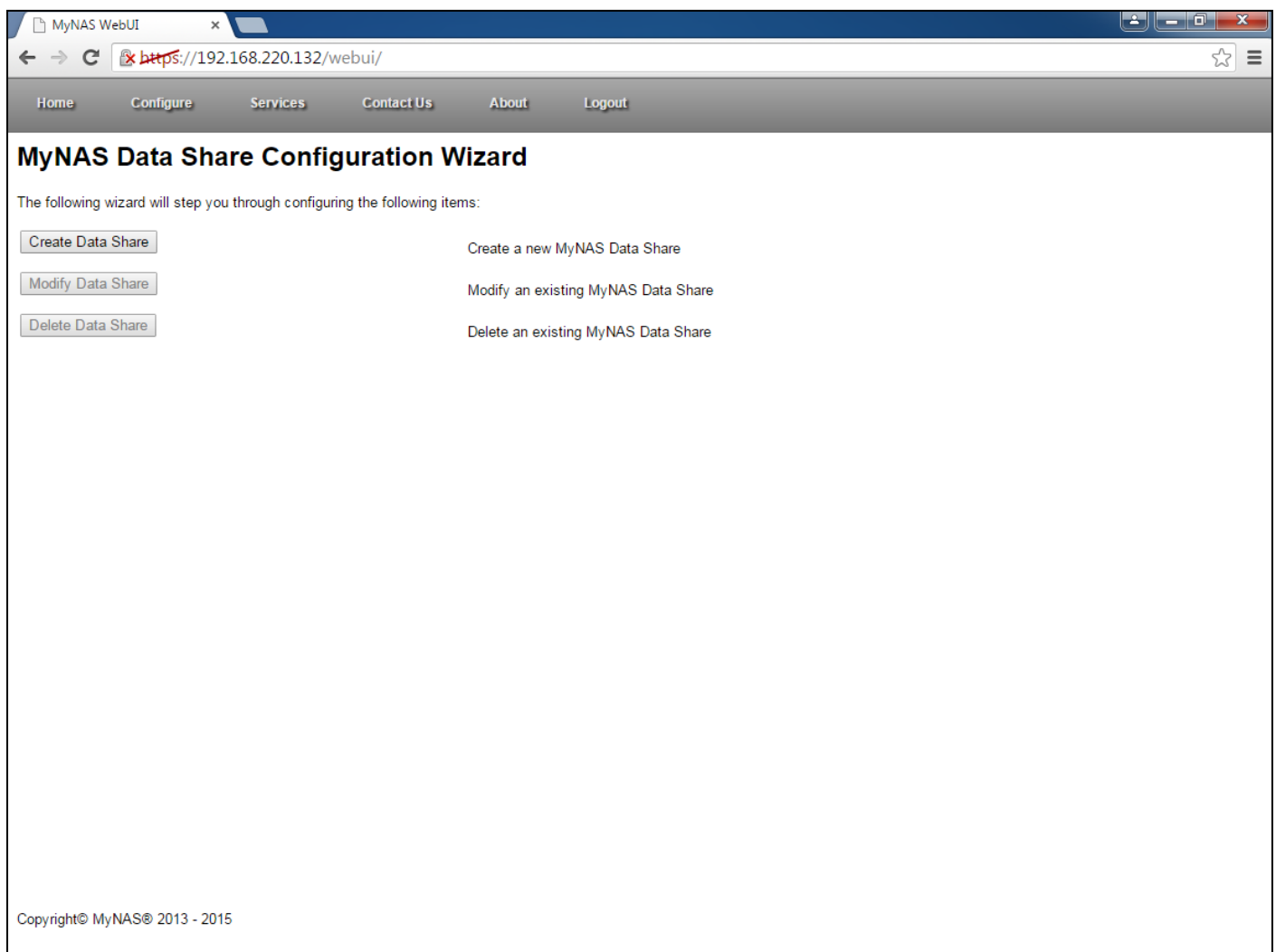
Additionally, each Data Share can be assigned security permissions to provide access control to your data.

Note: This section will focus on creating, modifying and deleting a Data Share. Working with user permissions will be handled in a separate section.

Creating a Data Share

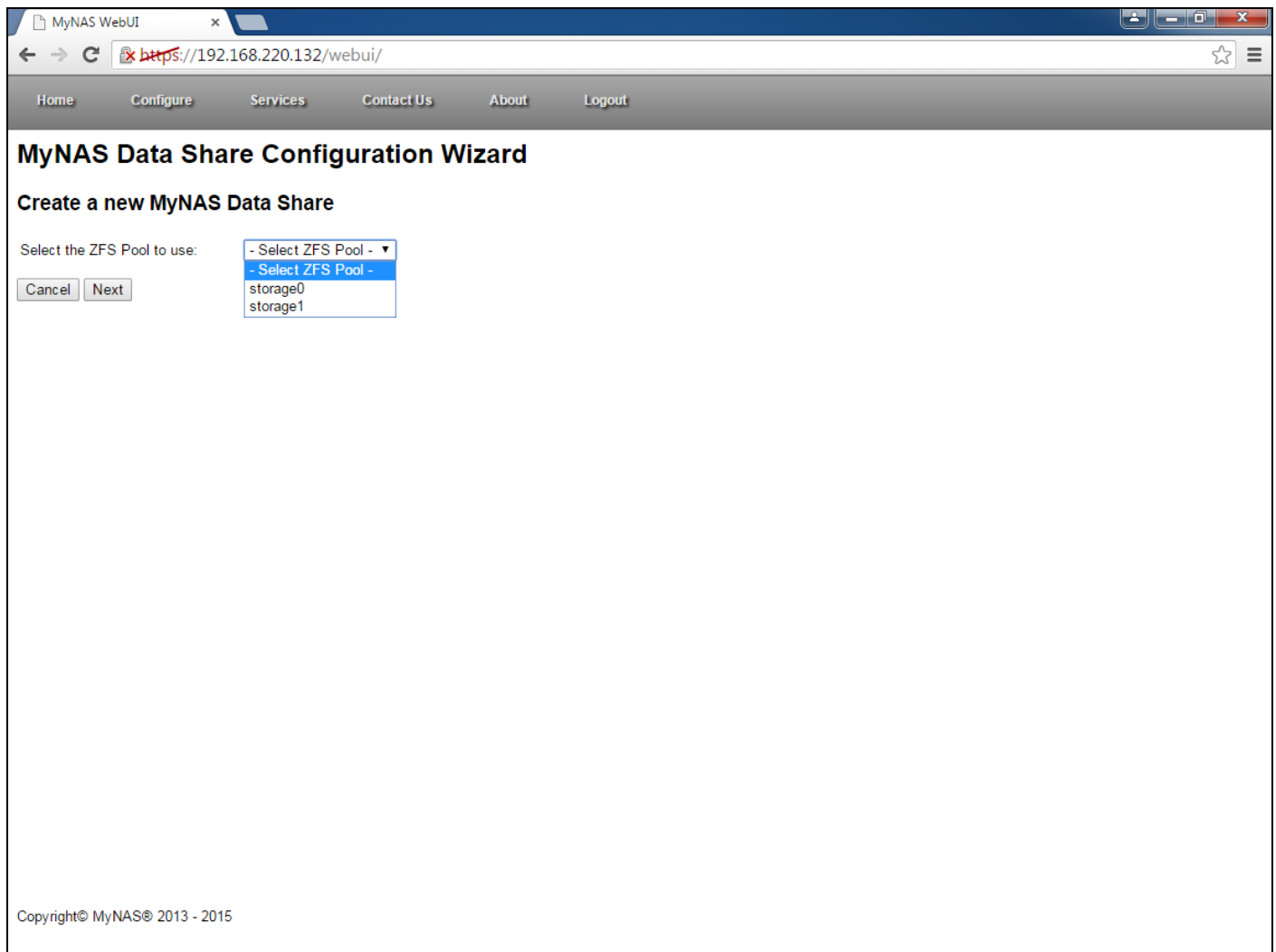
To create a Data Share on your MyNAS storage appliance, follow the directions below.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Data Shares'. Once selected, the following will be displayed:



To create a Data Share, click on the 'Create Data Share' button.

Depending on the ZFS Pool configuration, if there is more than 1 ZFS Pool configured, MyNAS will ask which ZFS Pool should be used for the Data Share creation:



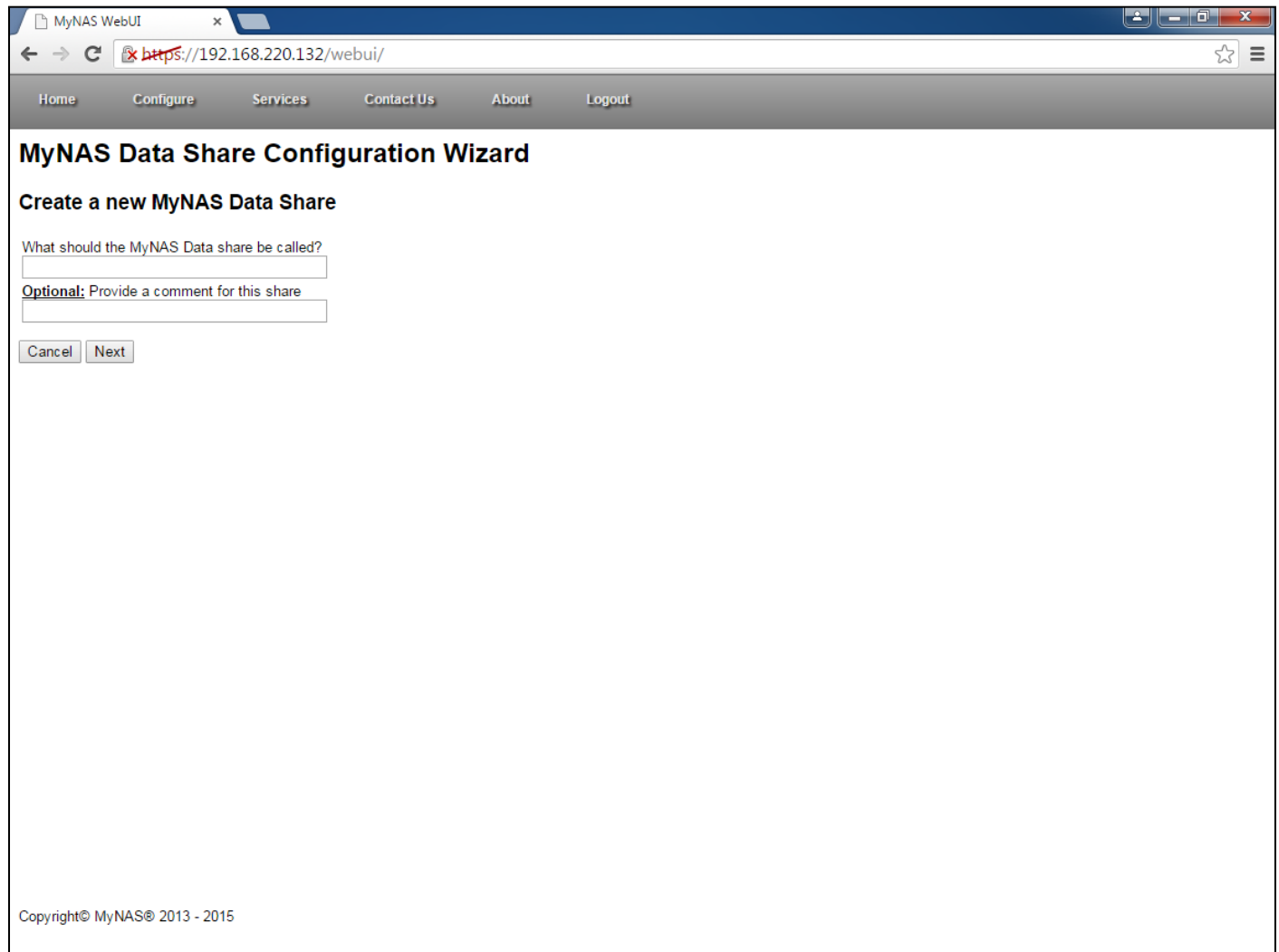
The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and contains the heading 'Create a new MyNAS Data Share'. Below this, the text 'Select the ZFS Pool to use:' is followed by a dropdown menu. The dropdown menu is open, showing the following options: '- Select ZFS Pool -', '- Select ZFS Pool -', 'storage0', and 'storage1'. The first option is highlighted in blue. To the left of the dropdown menu are 'Cancel' and 'Next' buttons. At the bottom left of the page, the copyright notice 'Copyright© MyNAS® 2013 - 2015' is visible.

Select the appropriate ZFS Pool and click Next

Configure the Data Share with the appropriate details to identify this Data Share

Note: The Data Share name can only contain alpha-numeric characters, including '-' and '_'

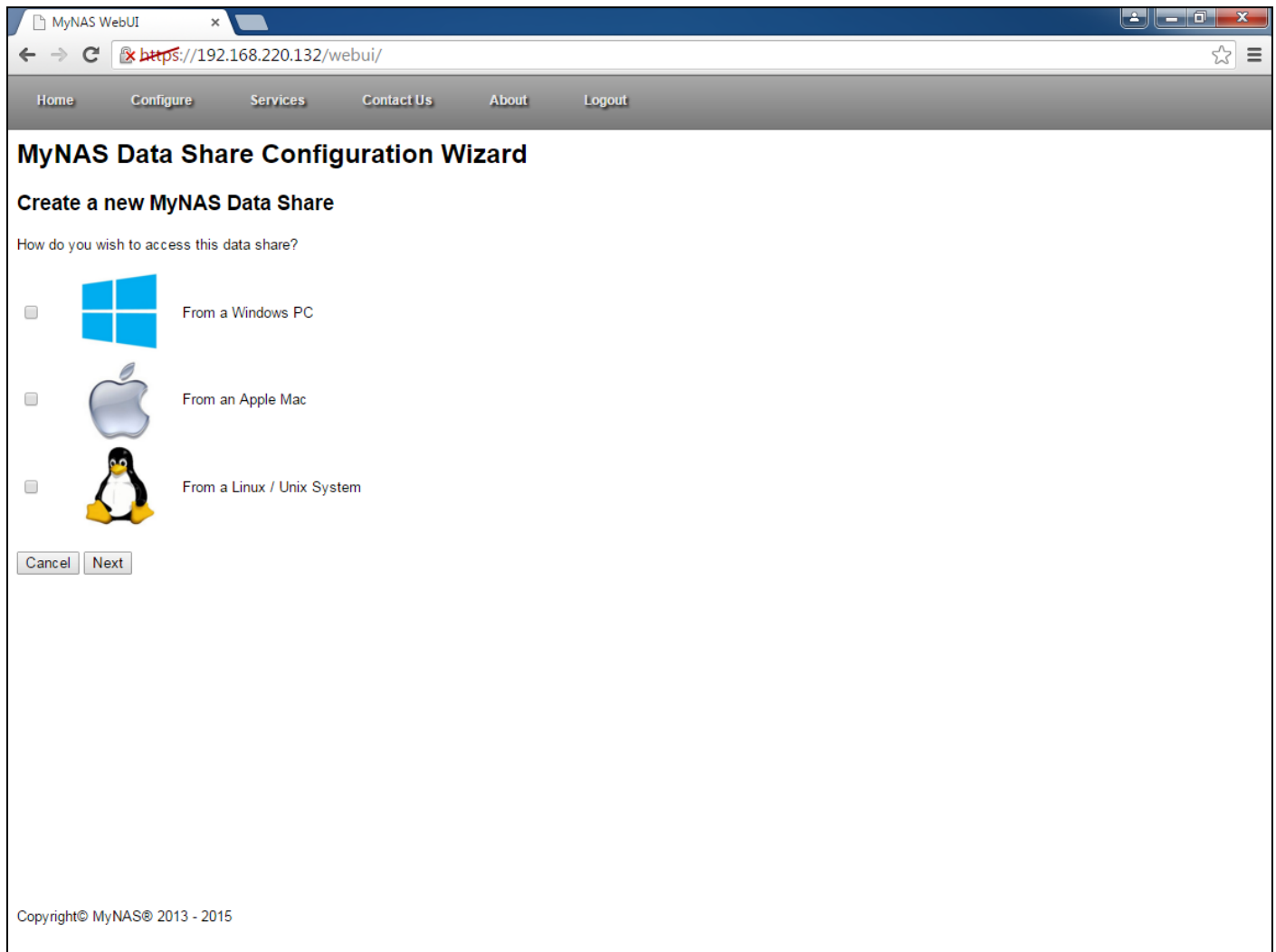
Note: The Data Share comment is as per the share name, however also including spaces and '.'



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and contains the heading 'Create a new MyNAS Data Share'. Below this, there is a text input field for the share name with the prompt 'What should the MyNAS Data share be called?'. An optional comment field is also present with the prompt 'Optional: Provide a comment for this share'. At the bottom of the form are 'Cancel' and 'Next' buttons. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

Once the new Data Share details have been configured, click 'Next'

Select how you wish to access the Data Share. MyNAS supports accessing Data Shares from Windows, Apple OS X and Linux / Unix systems

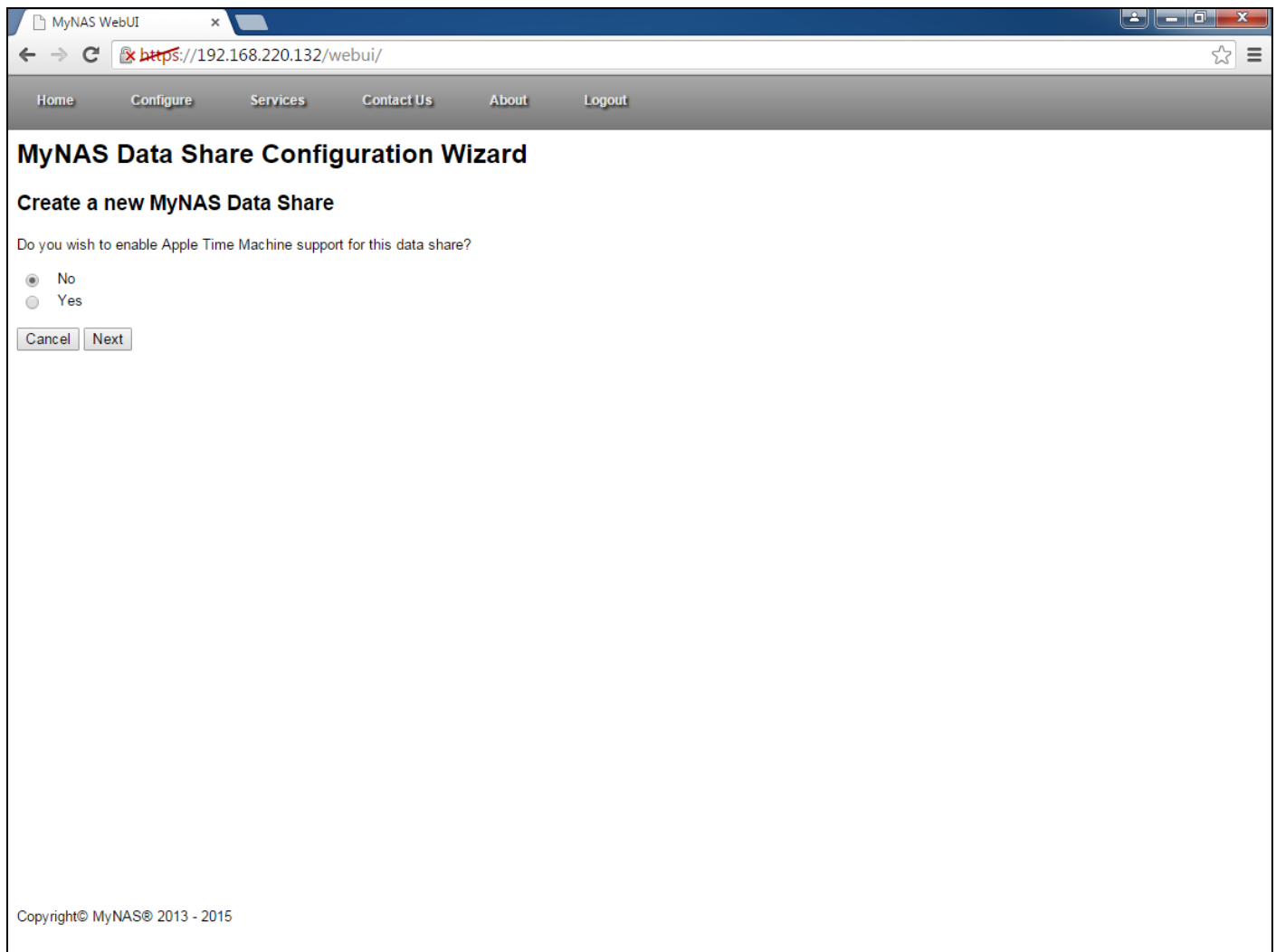


The screenshot shows a web browser window titled "MyNAS WebUI" with the address bar displaying "https://192.168.220.132/webui/". The browser's navigation bar includes links for Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Data Share Configuration Wizard" and contains the heading "Create a new MyNAS Data Share". Below this, a question asks "How do you wish to access this data share?". Three options are listed, each with an icon and a checkbox: "From a Windows PC" (Windows logo), "From an Apple Mac" (Apple logo), and "From a Linux / Unix System" (Tux penguin). At the bottom of the options are "Cancel" and "Next" buttons. The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Select the appropriate Data Share access mechanism's and click Next

If Apple OS X was selected, will the data share be used to support Apple Time Machine? Typically a separate MyNAS Data Share should be configured for OS X Time Machine support.

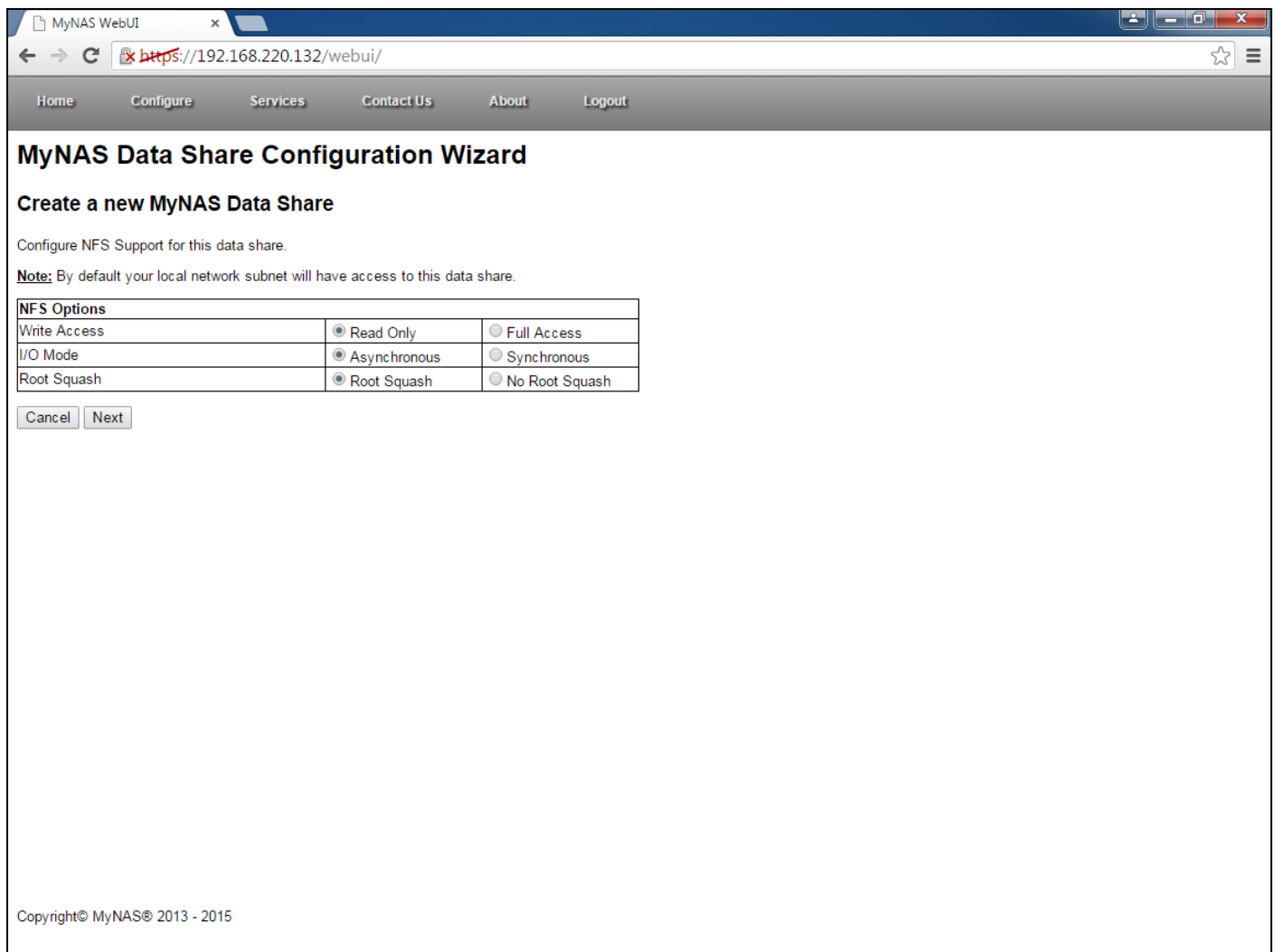
Refer to the section titled 'MyNAS Time Machine Support' for details on how to setup Time Machine on OS X.



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and contains the heading 'Create a new MyNAS Data Share'. Below this, a question is posed: 'Do you wish to enable Apple Time Machine support for this data share?'. There are two radio button options: 'No' (which is selected) and 'Yes'. At the bottom of the form, there are 'Cancel' and 'Next' buttons. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

To continue click Next

If Linux / Unix support was selected, configure the appropriate NFS options for this Data Share



The screenshot shows the MyNAS WebUI interface in a web browser. The address bar displays <https://192.168.220.132/webui/>. The navigation menu includes Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS Data Share Configuration Wizard". Below this, the sub-heading is "Create a new MyNAS Data Share". A note states: "Configure NFS Support for this data share. **Note:** By default your local network subnet will have access to this data share." A table titled "NFS Options" contains three rows of configuration options:

NFS Options		
Write Access	<input checked="" type="radio"/> Read Only	<input type="radio"/> Full Access
I/O Mode	<input checked="" type="radio"/> Asynchronous	<input type="radio"/> Synchronous
Root Squash	<input checked="" type="radio"/> Root Squash	<input type="radio"/> No Root Squash

At the bottom of the table are two buttons: "Cancel" and "Next". The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

To continue click Next

Configure the data importance of this Data Share by using the sliding selector. This configures MyNAS to replicate the data internally for data safety. By default, MyNAS will only store 1 copy of each file on the system. By changing the data importance, this changes the copies of each file stored internally:

- Medium Importance will store two copies of the files. This will double your normal disk utilisation for this Data Share
- High Importance will store three copies of the files. This will triple your normal disk utilisation for this Data Share

Use the table below to help determine the most appropriate importance level for your data:

Data Type	Suggested Importance Level	Reason
Video data such as DVD / Blue Ray backups of physical media which you own	Low	This type of data is potentially sourced from physical media which you own. If you lose this copy, a new copy can be easily obtained or created.
Audio data such as music purchased online or backups of physical media which you own	Low	This type of data is potentially sourced from physical media which you own or downloaded from the purchase source. If you lose this copy, a new copy can be easily obtained or created.
Data such as word processing documents, spreadsheet's, presentations, databases	Medium	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
School / Higher Education Documents (Essay's, Presentations, Thesis, Project work)	High	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
Programming Source Code	Medium / High	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
Digital Memories including photo's, short home movies (such as those recorded via mobile devices), digital copies of non digital documents	High	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced

Data Type	Suggested Importance Level	Reason
Business Data such as contact information, business documents	Medium / High	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
Digital Photography / Video Workflow Editing	Medium / High	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced

Move the slider to configure the appropriate level of importance for your data that you will store on this data share:

MyNAS WebUI

https://192.168.220.132/webui/

Home Configure Services Contact Us About Logout

MyNAS Data Share Configuration Wizard

Create a new MyNAS Data Share

How important to you is this data that you will store on this MyNAS Data Share?

Refer to the "MyNAS Installation Guide" for help in regards to setting an appropriate importance value.

Note: Medium and High Importance levels will consume more disk space than the actual size of data.

Slider: [Low] [Medium] [High]

Medium Importance

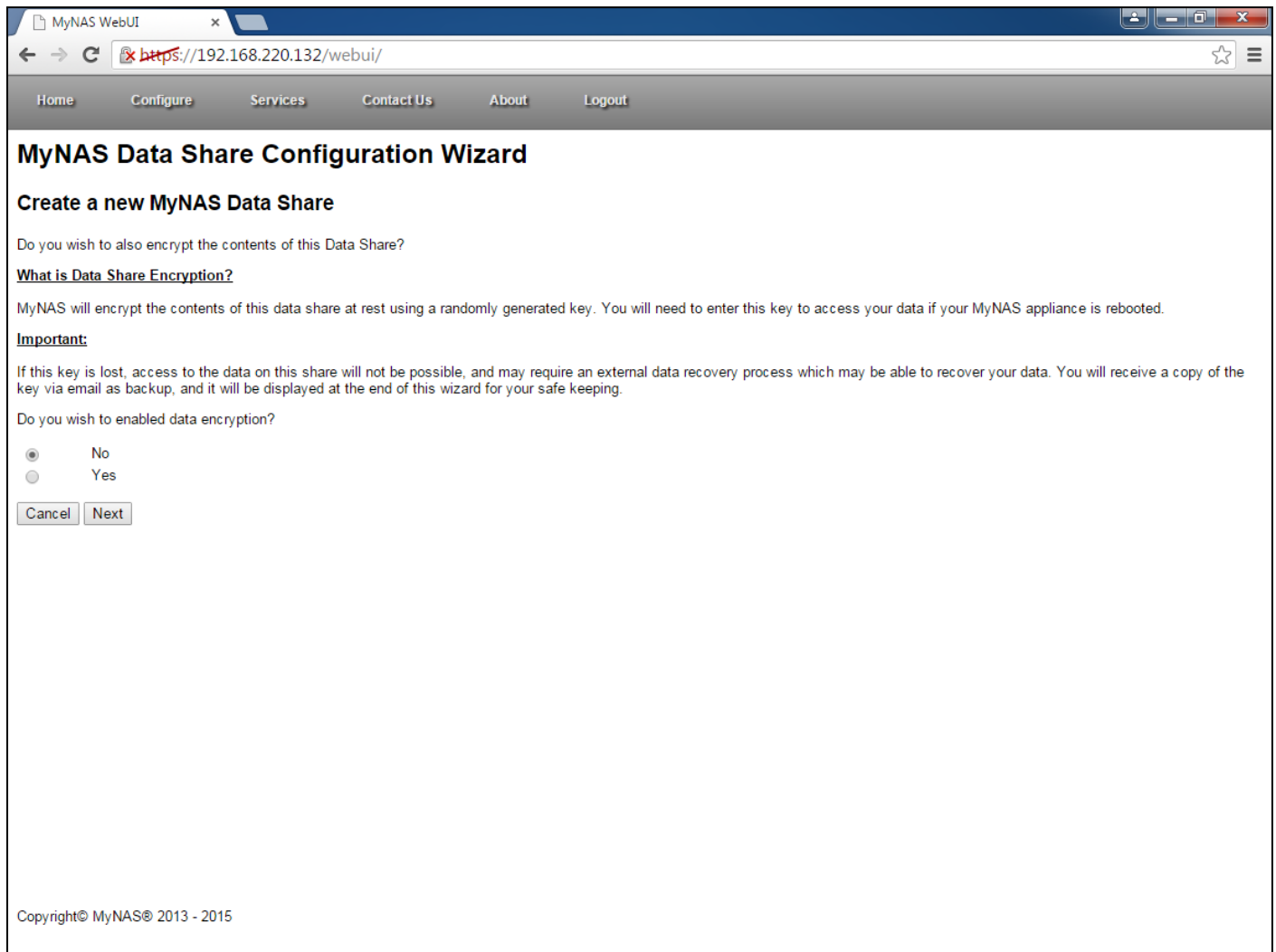
- Data such as word processing documents, spreadsheet's, presentations, databases
- Programming Source Code
- Business Data such as contact information, business documents
- Digital Photography / Video Workflow Editing

Cancel Next

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Once the appropriate data importance has been selected, click 'Next'

All Data Share's regardless of data importance are able to be additionally safe guarded by encrypting the data stored within the Data Share.



The screenshot shows a web browser window titled "MyNAS WebUI" with the address bar displaying "https://192.168.220.132/webui/". The navigation menu includes "Home", "Configure", "Services", "Contact Us", "About", and "Logout". The main content area is titled "MyNAS Data Share Configuration Wizard" and contains the following text:

Create a new MyNAS Data Share

Do you wish to also encrypt the contents of this Data Share?

What is Data Share Encryption?

MyNAS will encrypt the contents of this data share at rest using a randomly generated key. You will need to enter this key to access your data if your MyNAS appliance is rebooted.

Important:

If this key is lost, access to the data on this share will not be possible, and may require an external data recovery process which may be able to recover your data. You will receive a copy of the key via email as backup, and it will be displayed at the end of this wizard for your safe keeping.

Do you wish to enabled data encryption?

☒ No
☐ Yes

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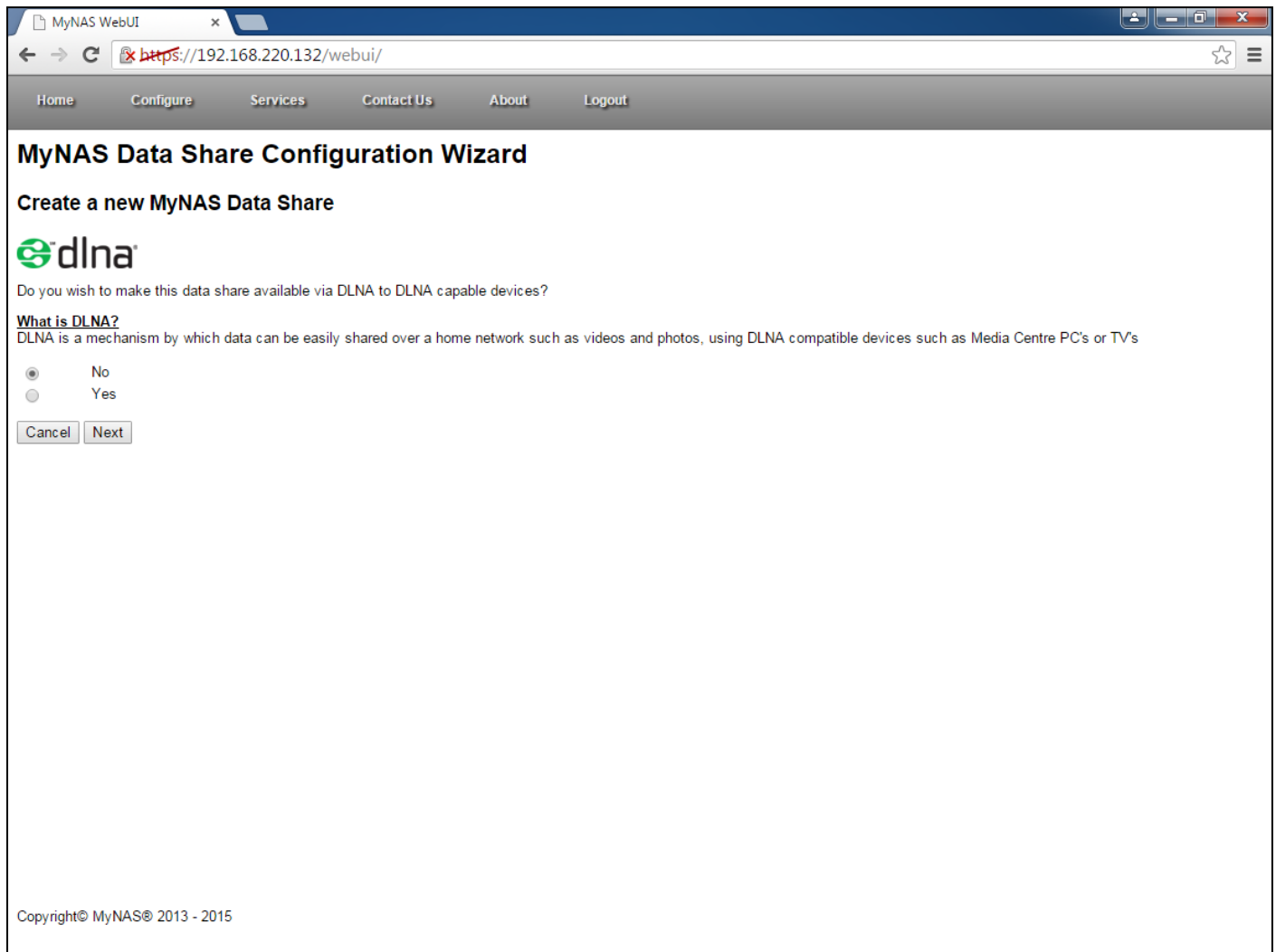
Select if you wish to encrypt the contents of this Data Share and click Next

Note:

When enabling Data Share Encryption, the following functionality is currently not available:

- Utilising the Windows Previous Version functionality
- Accessing an encrypted data share from a Linux or Unix system

If you would like the data being stored on this Data Share to be available via DLNA, configure the DLNA option as required:



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The navigation menu at the top includes "Home", "Configure", "Services", "Contact Us", "About", and "Logout". The main content area is titled "MyNAS Data Share Configuration Wizard" and "Create a new MyNAS Data Share". Below this, the "dlina" logo is displayed. The question "Do you wish to make this data share available via DLNA to DLNA capable devices?" is followed by a "What is DLNA?" section explaining that DLNA is a mechanism for sharing data over a home network. Two radio button options are provided: "No" (selected) and "Yes". At the bottom of the form are "Cancel" and "Next" buttons. The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Once the DLNA option is selected, click 'Next'

Creating ZFS Snapshot's is a highly beneficial feature of ZFS which allows rolling back to a specific point in time of any configured file system where for which a snapshot is created. It allows essentially the local recovery of accidental deleted or corrupted files.

Note: Snapshots should not be considered as a backup for your data. It is recommended that you take additional appropriate steps to backup your important data to a secondary (and potentially remote) system.

For any Data Share that you create and combined with the importance that you place on its data - the table below should guide you in determining if to snapshot the data and how often:

Data Type	Suggested Snapshot Frequency	Reason
Video data such as DVD / Blue Ray backups of physical media which you own	None	This type of data is potentially sourced from physical media which you own. If you lose this copy, a new copy can be easily obtained or created.
Audio data such as music purchased online or backups of physical media which you own	None	This type of data is potentially sourced from physical media which you own or downloaded from the purchase source. If you lose this copy, a new copy can be easily obtained or created.
Data such as word processing documents, spreadsheet's, presentations, databases	Hourly and Daily	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
School work / Homework	Hourly, Daily, Weekly and Monthly	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
Programming Source Code	Hourly, Daily, Weekly and Monthly	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced

Data Type	Suggested Snapshot Frequency	Reason
Digital Memories including photo's, short home movies (such as those recorded via mobile devices), scan's of non digital documents	Daily and / or Weekly	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
Business Data such as contact information, business documents	Daily, Weekly and Monthly	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced
Digital Photography / Workflow Editing	Hourly, Daily, Weekly and Monthly	This type of data contains potentially significant time and effort to create the initial content. The loss of this data could cause an impact and may not be able to be easily replaced

Depending on the frequency selected, this will dictate on the number of snapshots that are generated for that ZFS volume:

Snapshot Frequency	Snapshots Retained before roll-over	Size of Snapshot
Frequently	4	Any change in any file since the previous 15 minute snapshot was taken
Hourly	24	Any change in any file since the previous hour's snapshot was taken
Daily	31	Any change in any file since the previous daily snapshot was taken
Weekly	52	Any change in any file since the previous weekly snapshot was taken
Monthly	12	Any change in any file since the previous monthly snapshot was taken

The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled 'MyNAS WebUI'. The navigation menu at the top includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS Data Share Configuration Wizard'. Below this, the sub-heading is 'Create a new MyNAS Data Share'. The text asks, 'Do you wish to enable snapshots for this data share?' and explains that snapshots allow for the local recovery of accidentally deleted files. It also refers to the 'MyNAS Installation Guide' for help in selecting a snapshot frequency. There are two radio buttons: 'No' and 'Yes, Enable snapshots for this data share'. The 'Yes' option is selected. Below this is a section titled 'Snapshot Frequency' with a list of options, each with a checked checkbox and a description: 'Frequent' (A new snapshot is taken every 15 minutes, keeping 4 snapshots), 'Hourly' (A new snapshot is taken hourly, keeping 24 snapshots), 'Daily' (A new snapshot is taken Daily at 1AM, keeping 31 snapshots), 'Weekly' (A new snapshot is taken Weekly at 1AM, keeping 52 snapshots), and 'Monthly' (A new snapshot is taken Monthly at 1AM, keeping 12 snapshots). At the bottom of the wizard are 'Cancel' and 'Next' buttons. The footer text reads 'Copyright© MyNAS® 2013 - 2015'.

MyNAS WebUI x

← → ↻ ~~https://192.168.220.132/webui/~~ ☆ ≡

Home Configure Services Contact Us About Logout

MyNAS Data Share Configuration Wizard

Create a new MyNAS Data Share

Do you wish to enable snapshots for this data share?
Snapshots allow the local recovery of accidentally deleted files when there is an available snapshot
Refer to the "MyNAS Installation Guide" for help in regards to selecting a suggested snapshot frequency for the type of data which will be present on this data share.

☐ No
☒ Yes, Enable snapshots for this data share

Snapshot Frequency

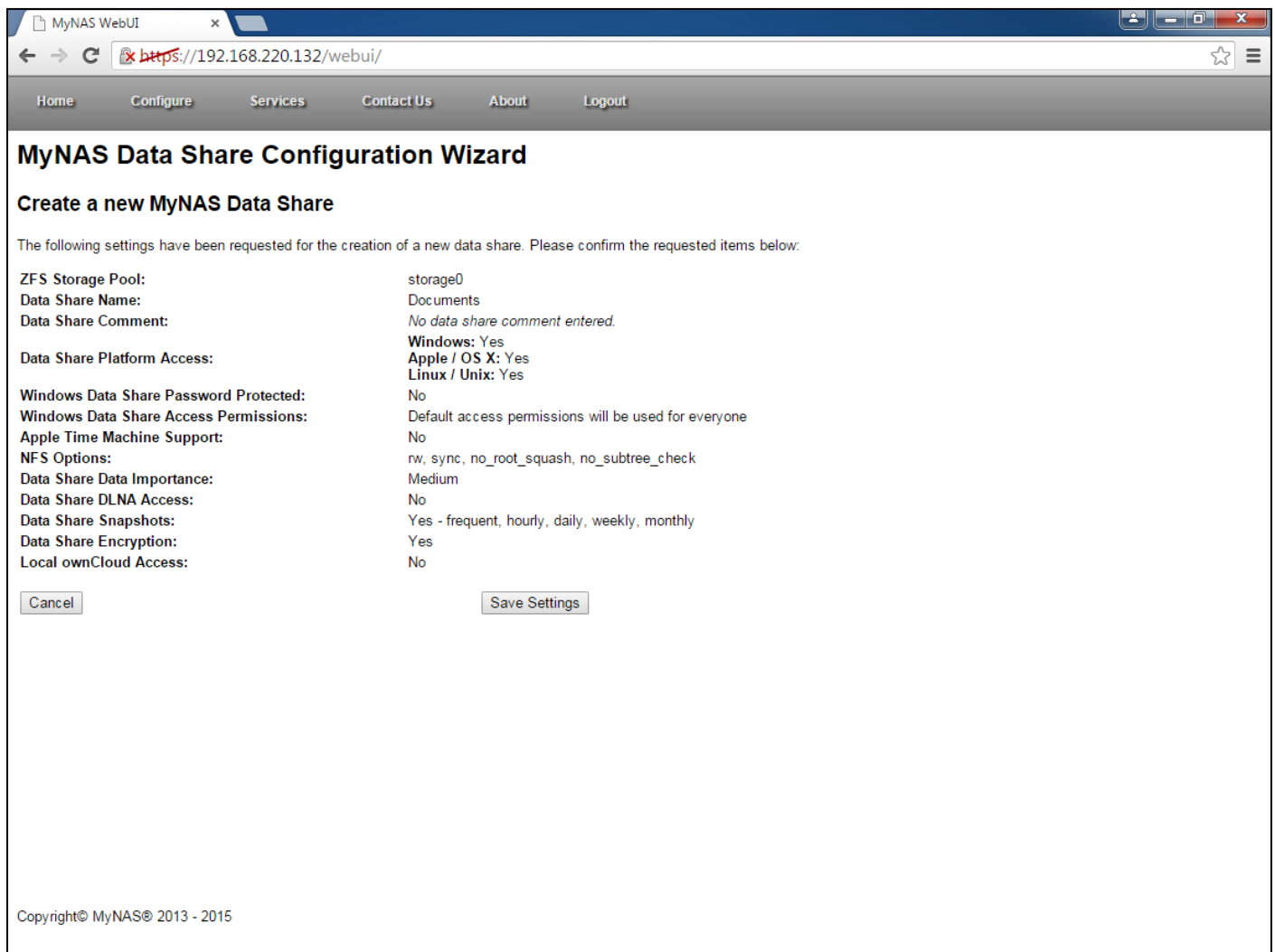
<input checked="" type="checkbox"/> Frequent	A new snapshot is taken every 15 minutes, keeping 4 snapshots
<input checked="" type="checkbox"/> Hourly	A new snapshot is taken hourly, keeping 24 snapshots
<input checked="" type="checkbox"/> Daily	A new snapshot is taken Daily at 1AM, keeping 31 snapshots
<input checked="" type="checkbox"/> Weekly	A new snapshot is taken Weekly at 1AM, keeping 52 snapshots
<input checked="" type="checkbox"/> Monthly	A new snapshot is taken Monthly at 1AM, keeping 12 snapshots

Cancel Next

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Select the appropriate snapshot frequency for the Data Share, and click 'Next'

Confirm the settings for this new Data Share:



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Data Share Configuration Wizard" and "Create a new MyNAS Data Share". Below this, a message states: "The following settings have been requested for the creation of a new data share. Please confirm the requested items below:". The settings are listed in two columns:

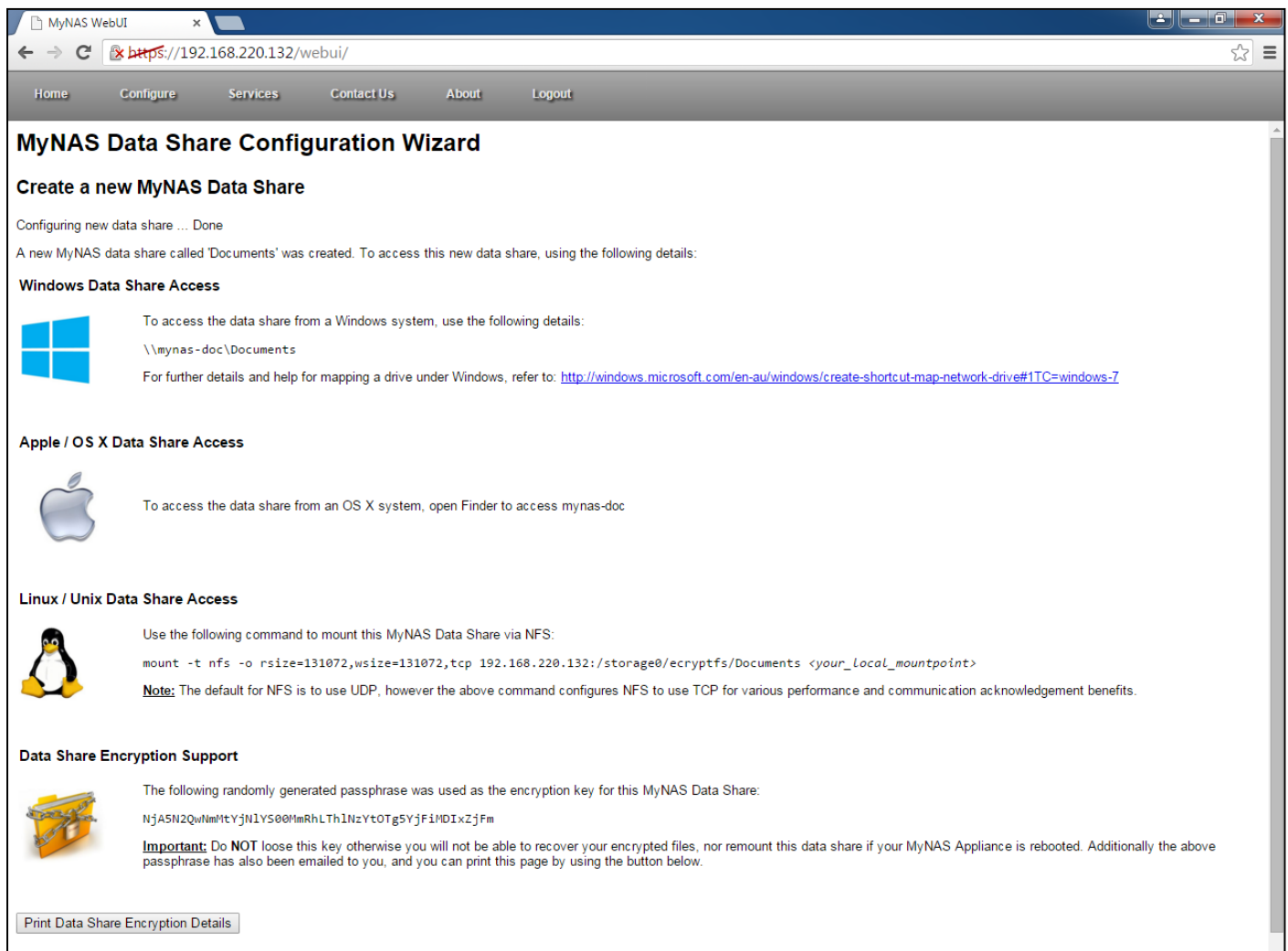
ZFS Storage Pool:	storage0
Data Share Name:	Documents
Data Share Comment:	No data share comment entered.
Data Share Platform Access:	Windows: Yes Apple / OS X: Yes Linux / Unix: Yes
Windows Data Share Password Protected:	No
Windows Data Share Access Permissions:	Default access permissions will be used for everyone
Apple Time Machine Support:	No
NFS Options:	rw, sync, no_root_squash, no_subtree_check
Data Share Data Importance:	Medium
Data Share DLNA Access:	No
Data Share Snapshots:	Yes - frequent, hourly, daily, weekly, monthly
Data Share Encryption:	Yes
Local ownCloud Access:	No

At the bottom of the settings list, there are two buttons: "Cancel" and "Save Settings".

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Once all the settings are confirmed, click 'Save Settings'

MyNAS will now process the Data Share creation request. Once complete the following will be displayed:



The screenshot shows the MyNAS WebUI interface in a web browser. The browser's address bar displays `https://192.168.220.132/webui/`. The navigation menu at the top includes links for Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Data Share Configuration Wizard" and "Create a new MyNAS Data Share". It indicates that a new data share named "Documents" has been successfully created. The page provides access instructions for three operating systems: Windows, Apple / OS X, and Linux / Unix. For Windows, it shows the path `\\mynas-doc\Documents` and a link to Microsoft's documentation. For Apple / OS X, it instructs users to open Finder and access "mynas-doc". For Linux / Unix, it provides an NFS mount command: `mount -t nfs -o rsize=131072,wsz=131072,tcp 192.168.220.132:/storage0/ecryptfs/Documents <your_Local_mountpoint>`, along with a note about using TCP for better performance. A section for "Data Share Encryption Support" displays a randomly generated passphrase: `NjA5N2QwNmMtYjNlYS00MmRhLThtLnZyOTg5YjFjMDIxZjFm`, with an important warning not to lose it. A "Print Data Share Encryption Details" button is located at the bottom left of the content area.

MyNAS WebUI

[Home](#) [Configure](#) [Services](#) [Contact Us](#) [About](#) [Logout](#)

MyNAS Data Share Configuration Wizard

Create a new MyNAS Data Share

Configuring new data share ... Done

A new MyNAS data share called 'Documents' was created. To access this new data share, using the following details:

Windows Data Share Access

To access the data share from a Windows system, use the following details:

`\\mynas-doc\Documents`

For further details and help for mapping a drive under Windows, refer to: <http://windows.microsoft.com/en-au/windows/create-shortcut-map-network-drive#1TC=windows-7>

Apple / OS X Data Share Access

To access the data share from an OS X system, open Finder to access mynas-doc

Linux / Unix Data Share Access

Use the following command to mount this MyNAS Data Share via NFS:

```
mount -t nfs -o rsize=131072,wsz=131072,tcp 192.168.220.132:/storage0/ecryptfs/Documents <your_Local_mountpoint>
```

Note: The default for NFS is to use UDP, however the above command configures NFS to use TCP for various performance and communication acknowledgement benefits.

Data Share Encryption Support

The following randomly generated passphrase was used as the encryption key for this MyNAS Data Share:

`NjA5N2QwNmMtYjNlYS00MmRhLThtLnZyOTg5YjFjMDIxZjFm`

Important: Do NOT lose this key otherwise you will not be able to recover your encrypted files, nor remount this data share if your MyNAS Appliance is rebooted. Additionally the above passphrase has also been emailed to you, and you can print this page by using the button below.

[Print Data Share Encryption Details](#)

Note: If data share encryption was configured, an email will be sent your email address with the passphrase for this particular data share. You also have the opportunity to print the passphrase for your records.

Click 'Finish' to complete the Data Share creation wizard.

From the MyNAS Status Dashboard, a quick view is presented of any data shares configured on the system:

MyNAS Status Dashboard

System Information

Hostname	mynas-doc.localdomain
Version	MyNAS Release 1.3 (Yarra)
Kernel Version	3.14.54-3.el6.x86_64
IP Address	192.168.220.132
DNS Servers	192.168.220.2
Current Date and Time	Wed Oct 21 16:57:57 AEDT 2015
Uptime	0 days 0 hour(s) 39 minutes
Load Average	0.00 0.01 0.09

Hardware Information

Total Processors	1
Model	Intel(R) Core(TM) i7-5600U CPU @ 2.60GHz
CPU Speed	2.59 GHz
Cache Size	4096 KB
System Bogomips	5188.09
System Memory	2003.74 MB
Free Memory	1620.86 MB
System UUID	564DDC64-74A4-4FAC-C4E2-A47E11FC56F6

MyNAS Data Share Information

Share Name	Comment	Icons
Documents		Windows, Apple, Linux, Encryption, Importance, DLNA, Snapshots, Local, Cloud, Space

Storage Device Health

Device Name	Status	Disk Age
/dev/sda	SMART Health Status: OK	N/A
/dev/sdb	SMART Health Status: OK	N/A
/dev/sdc	SMART Health Status: OK	N/A
/dev/sdd	SMART Health Status: OK	N/A
/dev/sde	SMART Health Status: OK	N/A
/dev/sdf	SMART Health Status: OK	N/A
/dev/sdg	SMART Health Status: OK	N/A
/dev/sdh	SMART Health Status: OK	N/A
/dev/sdi	SMART Health Status: OK	N/A
/dev/sdj	SMART Health Status: OK	N/A
/dev/sdk	SMART Health Status: OK	N/A
/dev/sdl	SMART Health Status: OK	N/A

Storage Utilisation

ZFS Pool: storage0

Storage Space Used: 0 GB
Total Space Available: 4.81 GB

ZFS Pool: storage1

Storage Space Used: 0 GB
Total Space Available: 4.81 GB

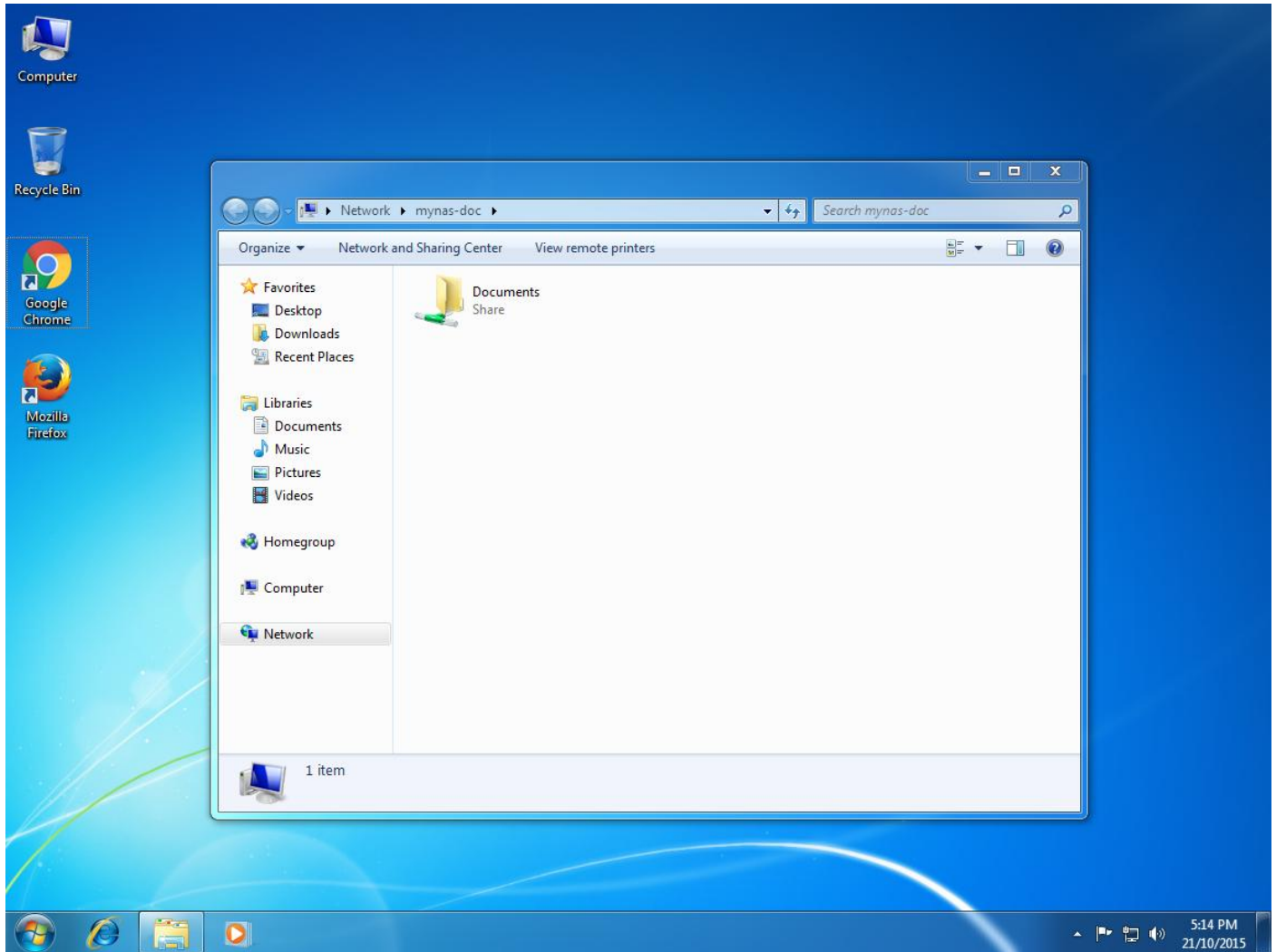
Copyright© MyNAS® 2013 - 2015

Data Share Icon Descriptions

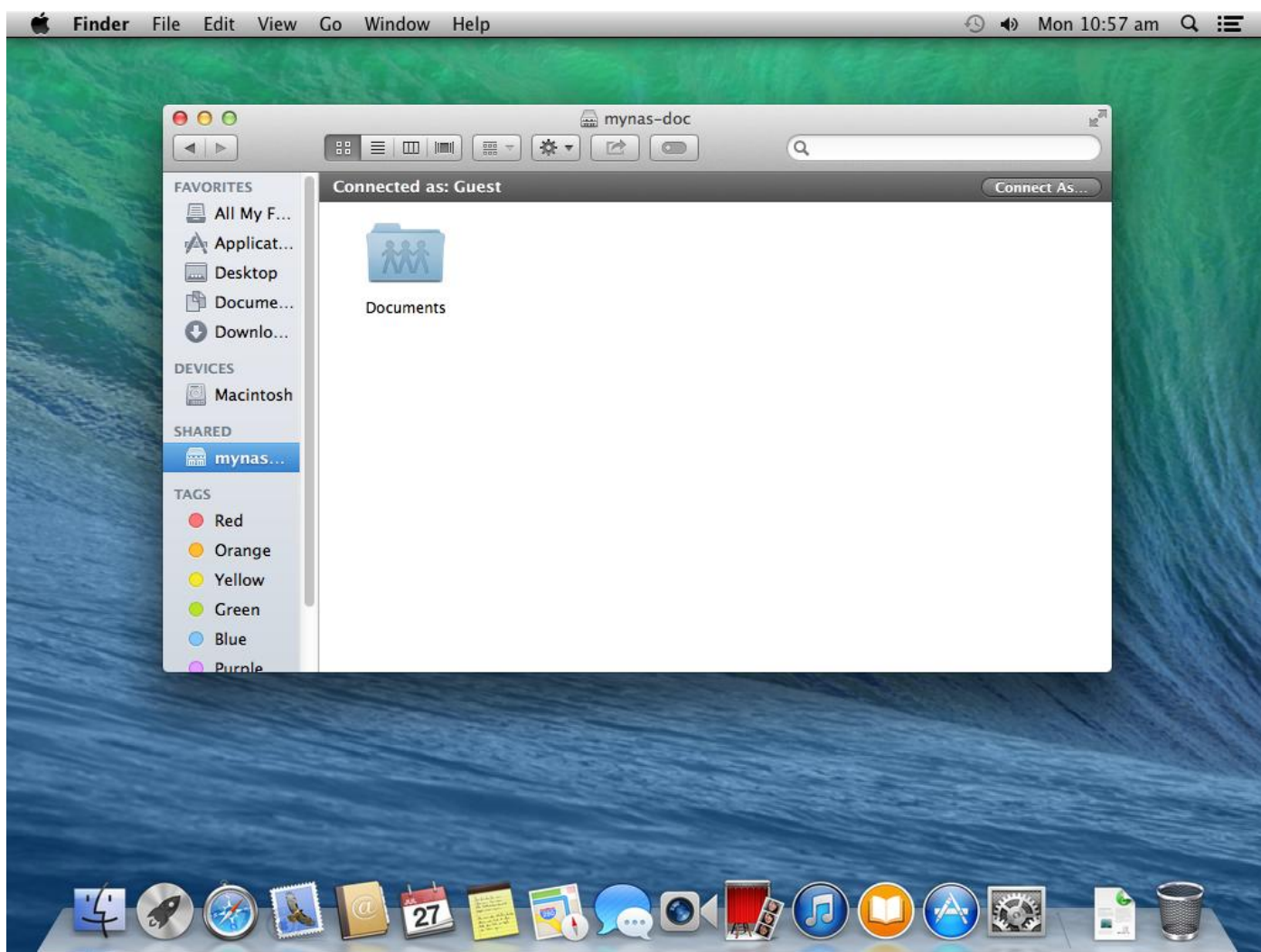
Data Share Icon	Description
	Microsoft Windows access
	Apple OS X access
	Linux / Unix access
	Data Share encryption
	Data Share importance
	Data Share access via DLNA services
	Data Share snapshots
	Local ownCloud Server access
	Cloud Replication access
	Space used by Data Share

From a Windows, Apple OSX or Linux system, the Data Share will be available as illustrated below:

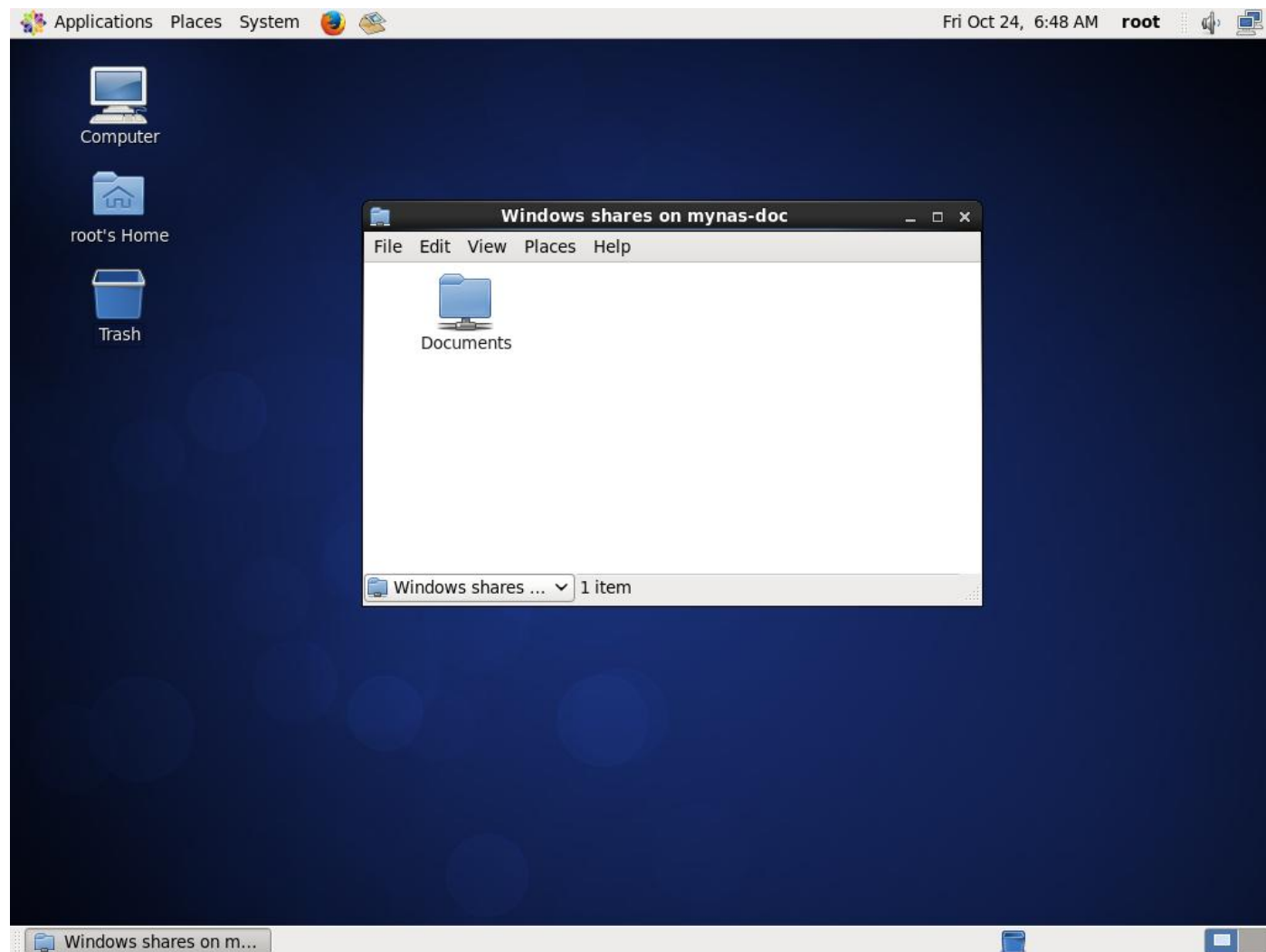
Windows



Apple OS X



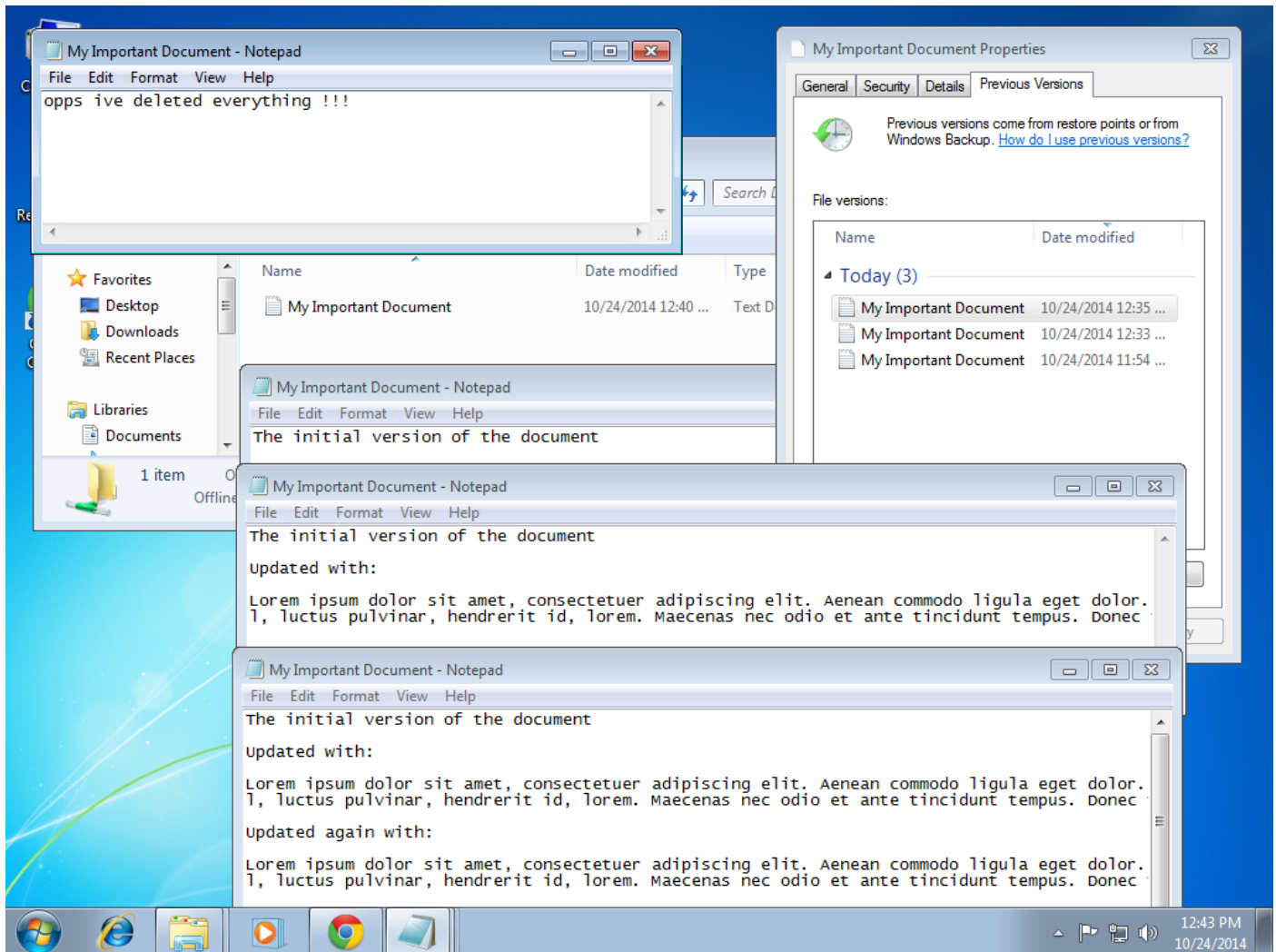
Linux



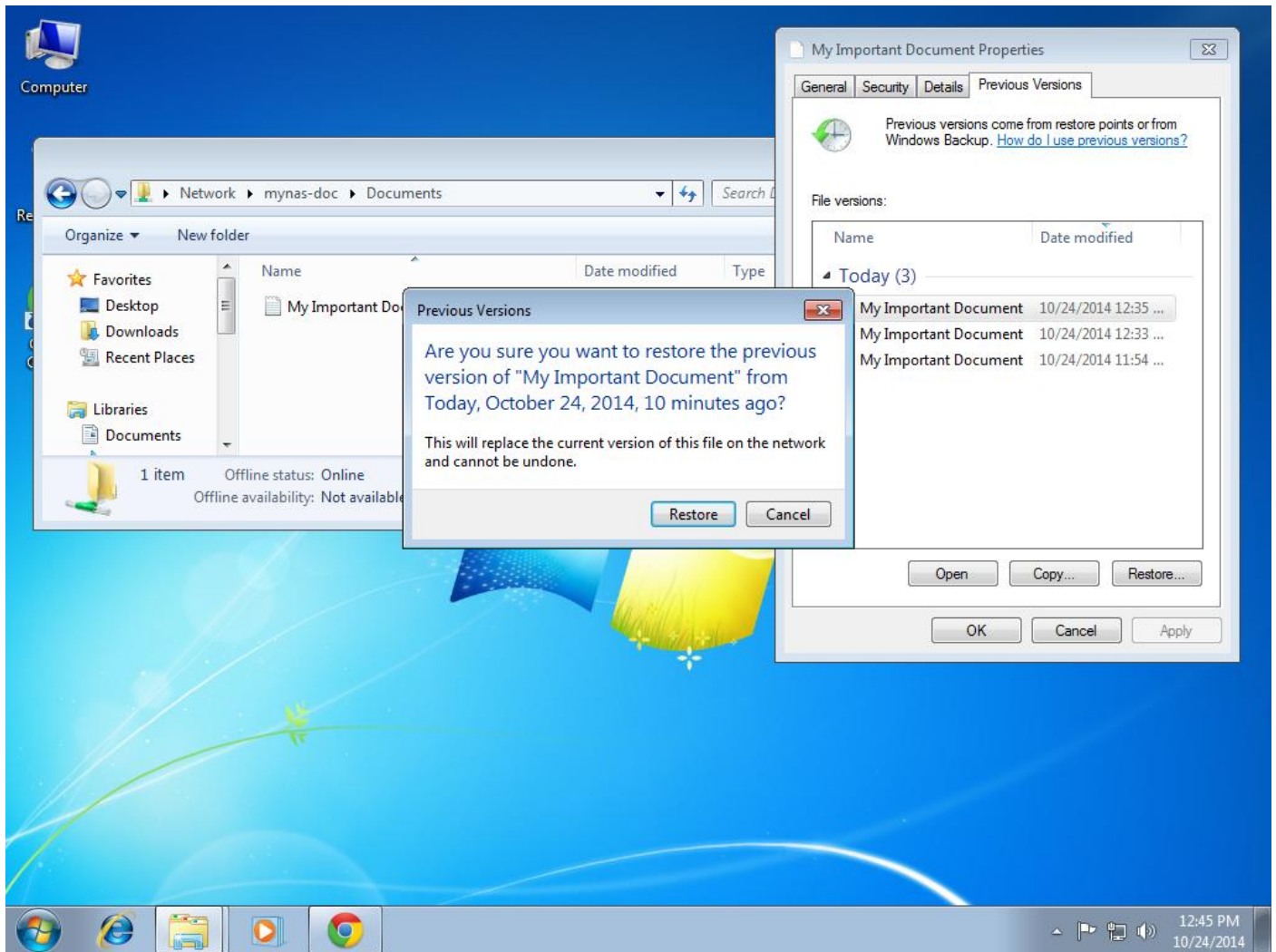
Using the Windows Previous Versions Functionality

If a particular Data Share is configured with snapshot capability, it will be possible to utilise the Windows Previous Versions.

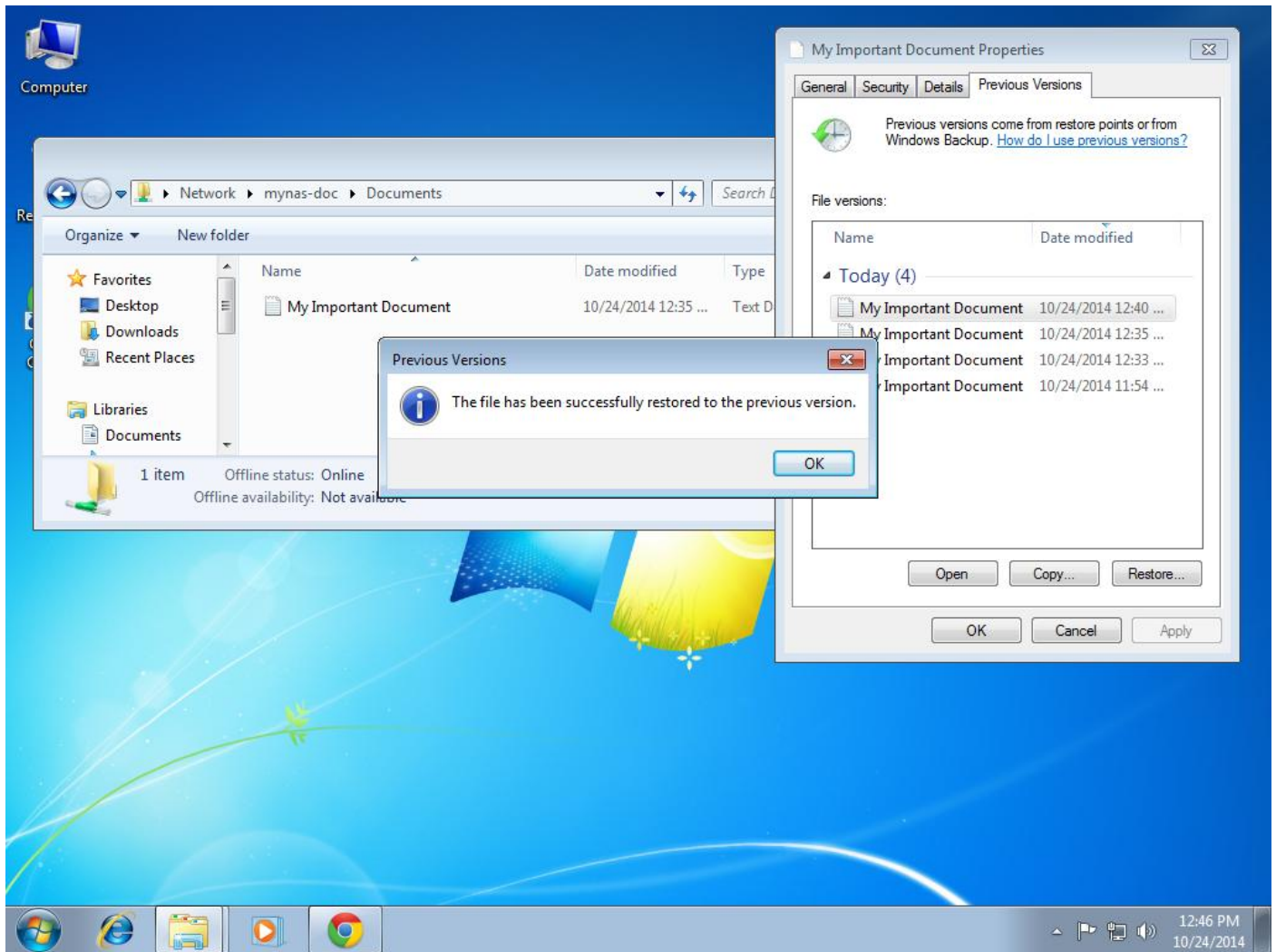
Once a snapshot has been created for a particular Data Share, and the particular file in question gets updated, the Windows Previous Version can be accessed by right-clicking on the file to display the document properties. On the tab's select the 'Previous Versions' to display any previous version that are available for that file as illustrated below:



To access to previous version, simply double-click on the file in question. Once the right file is identified, click on the Restore button to restore the selected file:



Click Restore and the file will now be restored from the snapshotted data.



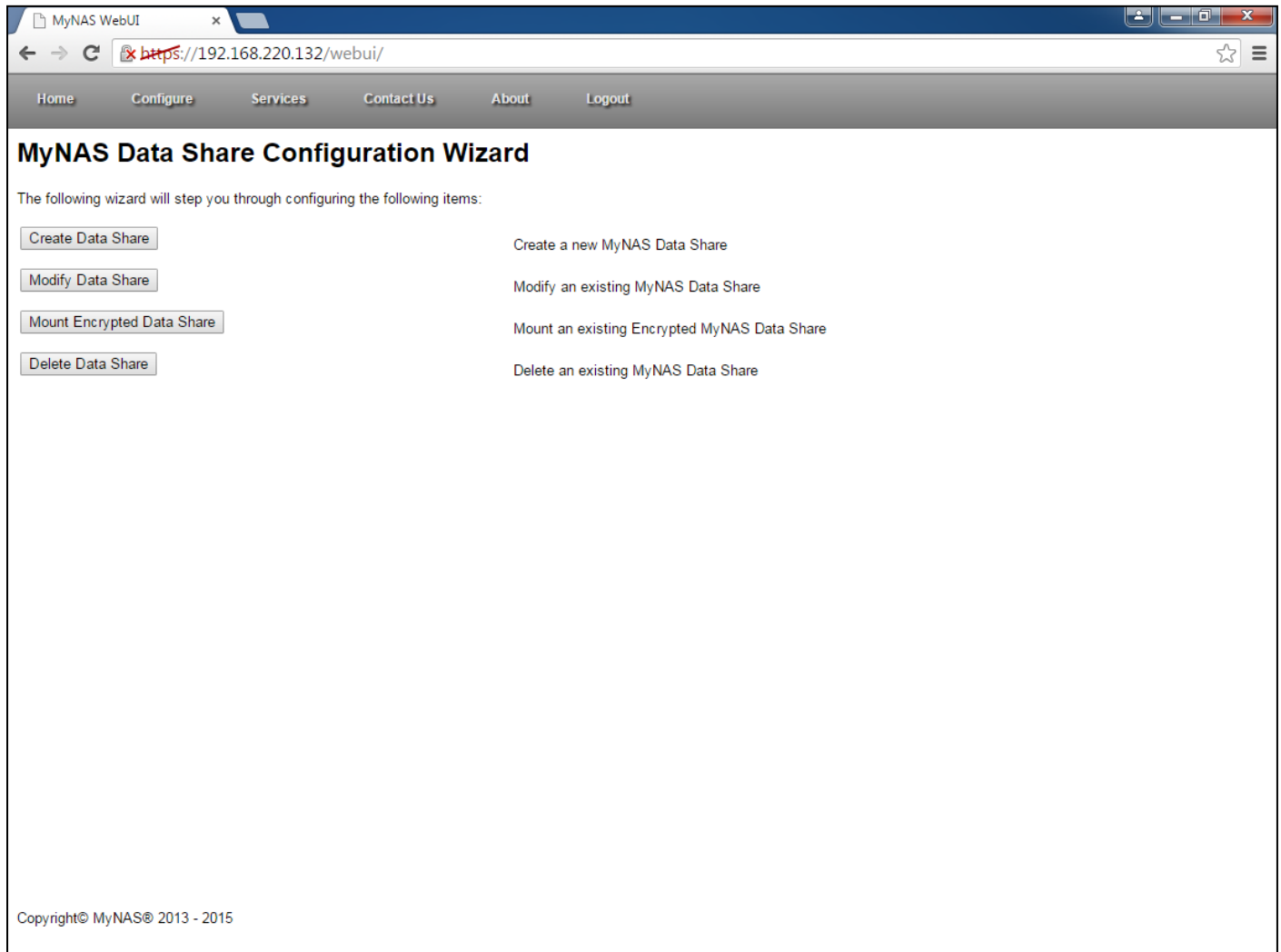
Click OK to complete the restore operation.

Remounting an Encrypted Data Share

If you configure a data share to be encrypted, and your MyNAS storage appliance is restarted, the encrypted data share will need to be remounted manually.

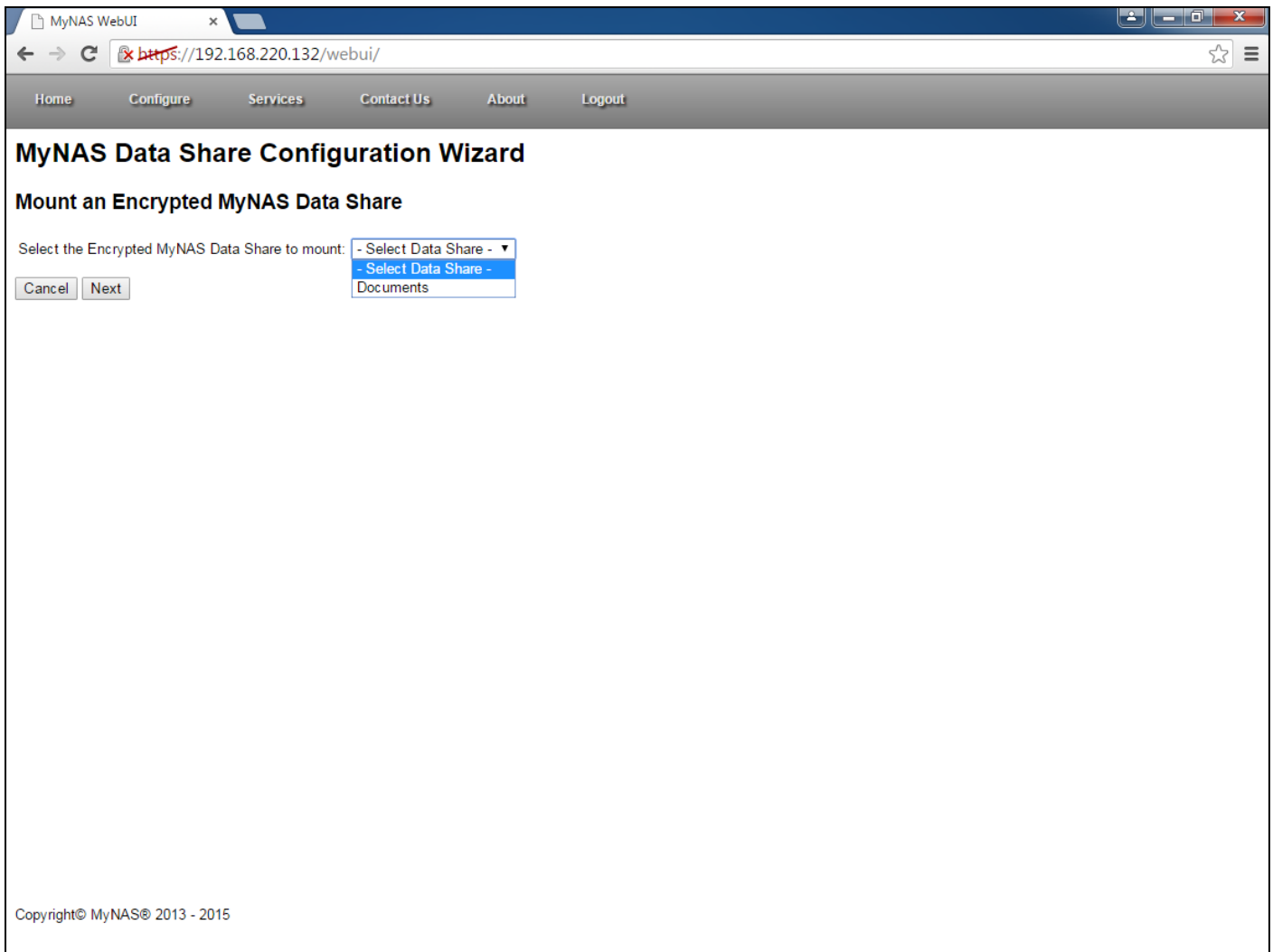
Use the directions below to update the Data Share as required.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Data Shares'. Once selected, the following will be displayed:



To remount an encrypted data share, click the 'Mount Encrypted Data Share' button


From the drop down menu, select the encrypted data share to remount:



Once the correct data share is selected, click next

Type in the data share encryption passphrase to remount the data share. The encryption passphrase is provided when the data share is created as illustrated below:

Data Share Encryption Support



The following randomly generated passphrase was used as the encryption key for this MyNAS Data Share:

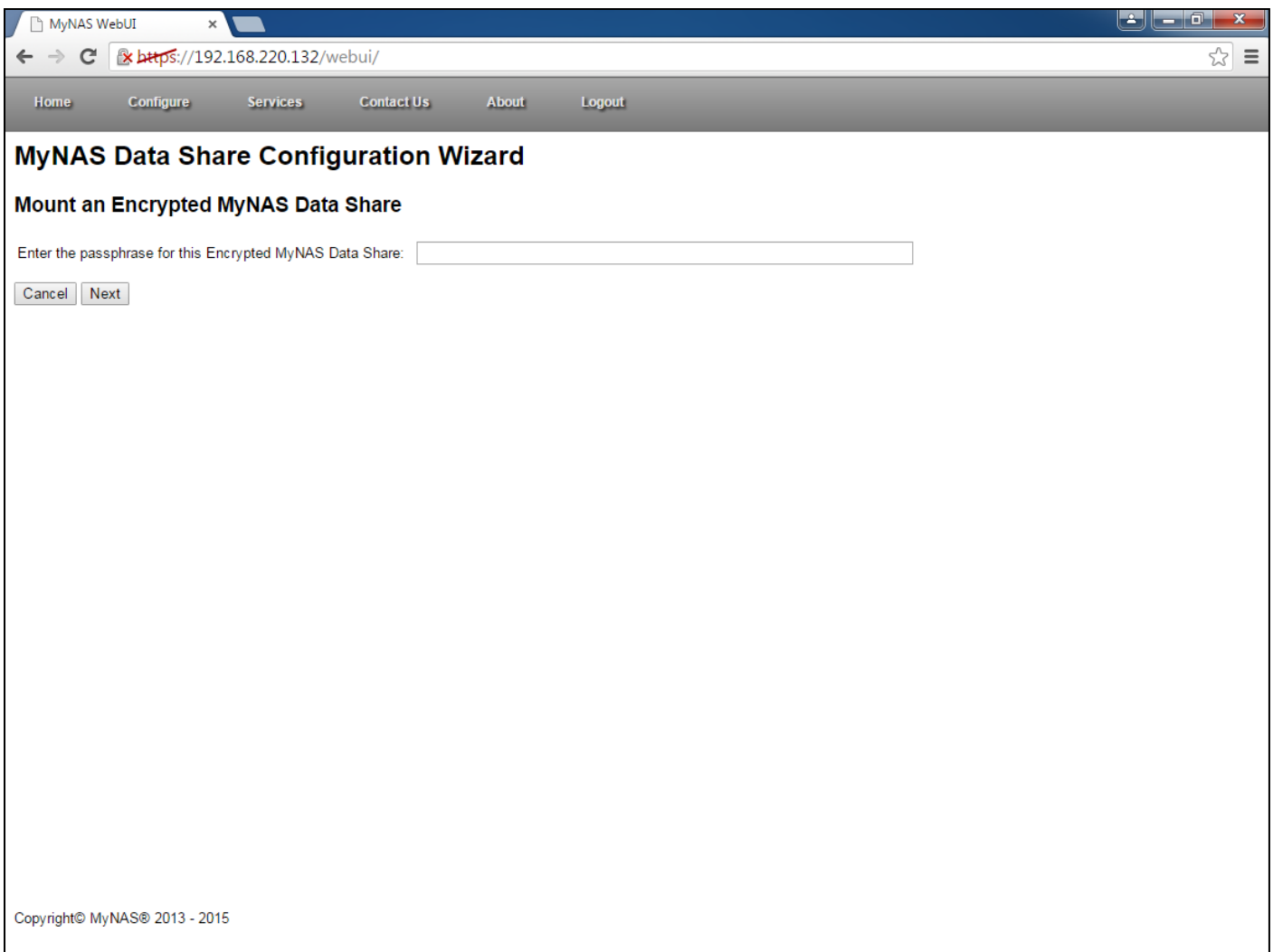
Mjk5NjJkxYzQxNS00ZmI2LWU1MzU0MjYzYU4YmE3MTM0

Important: Do **NOT** lose this key otherwise you will not be able to recover your encrypted files, nor remount this data share if your MyNAS Appliance is rebooted. Additionally the above passphrase has also been emailed to you, and you can print this page by using the button below.

[Print Data Share Encryption Details](#)

Note: If you do not have the passphrase for the data share, any encrypted data is **unrecoverable**.

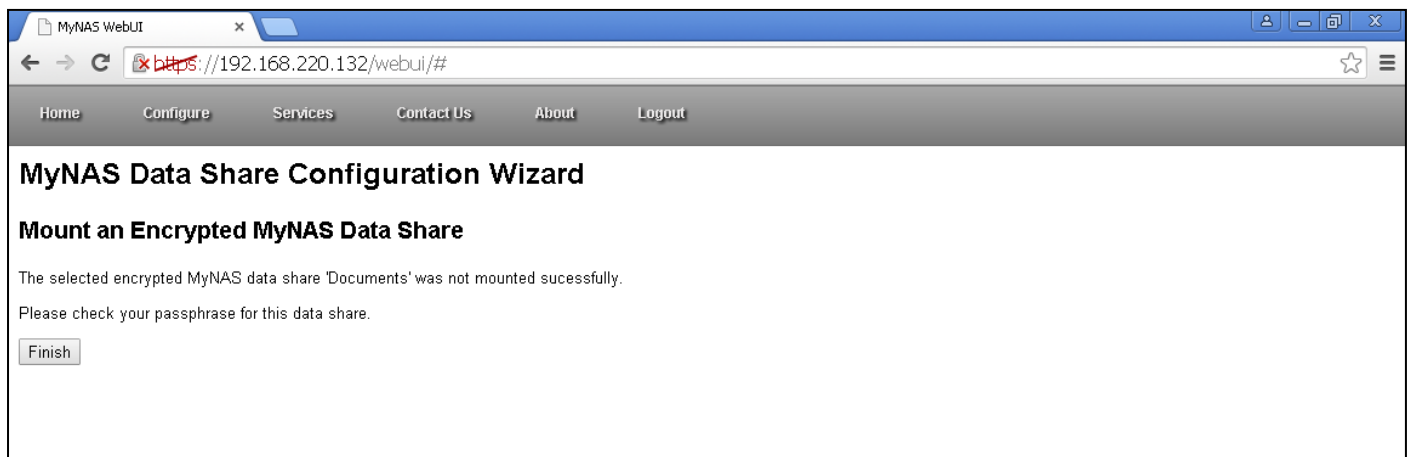
Once you have this data share's encryption passphrase, enter the passphrase to remount the data share:



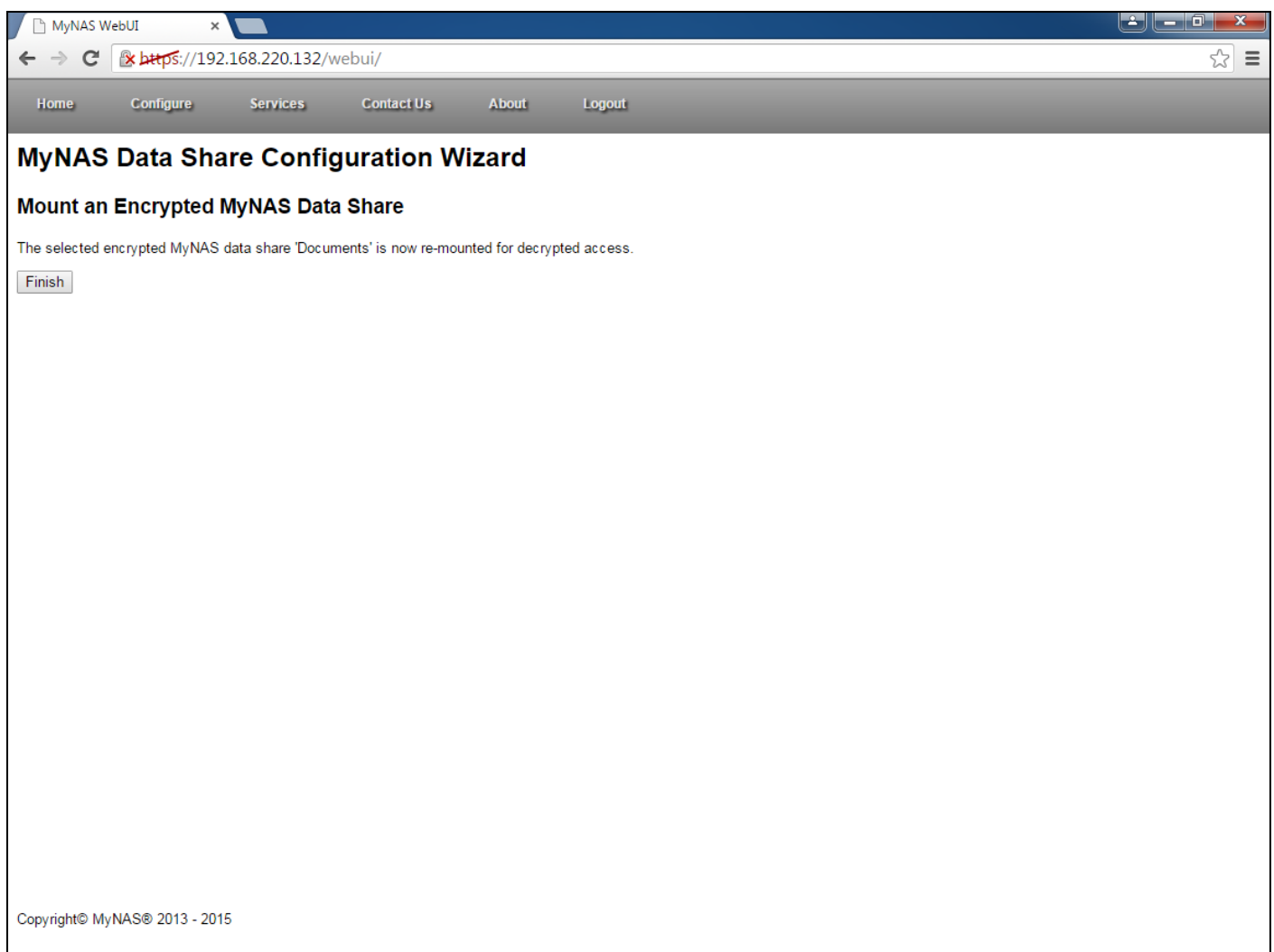
The screenshot shows a web browser window with the address bar displaying <https://192.168.220.132/webui/>. The page title is "MyNAS Data Share Configuration Wizard". The main heading is "Mount an Encrypted MyNAS Data Share". Below this, there is a text input field labeled "Enter the passphrase for this Encrypted MyNAS Data Share:". At the bottom left of the form area, there are two buttons: "Cancel" and "Next". The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Click 'Next' to continue

If there is an issue with the passphrase, the following error message will be displayed:



If the passphrase is correct, the data share will be mounted successfully:



Modify a Data Share

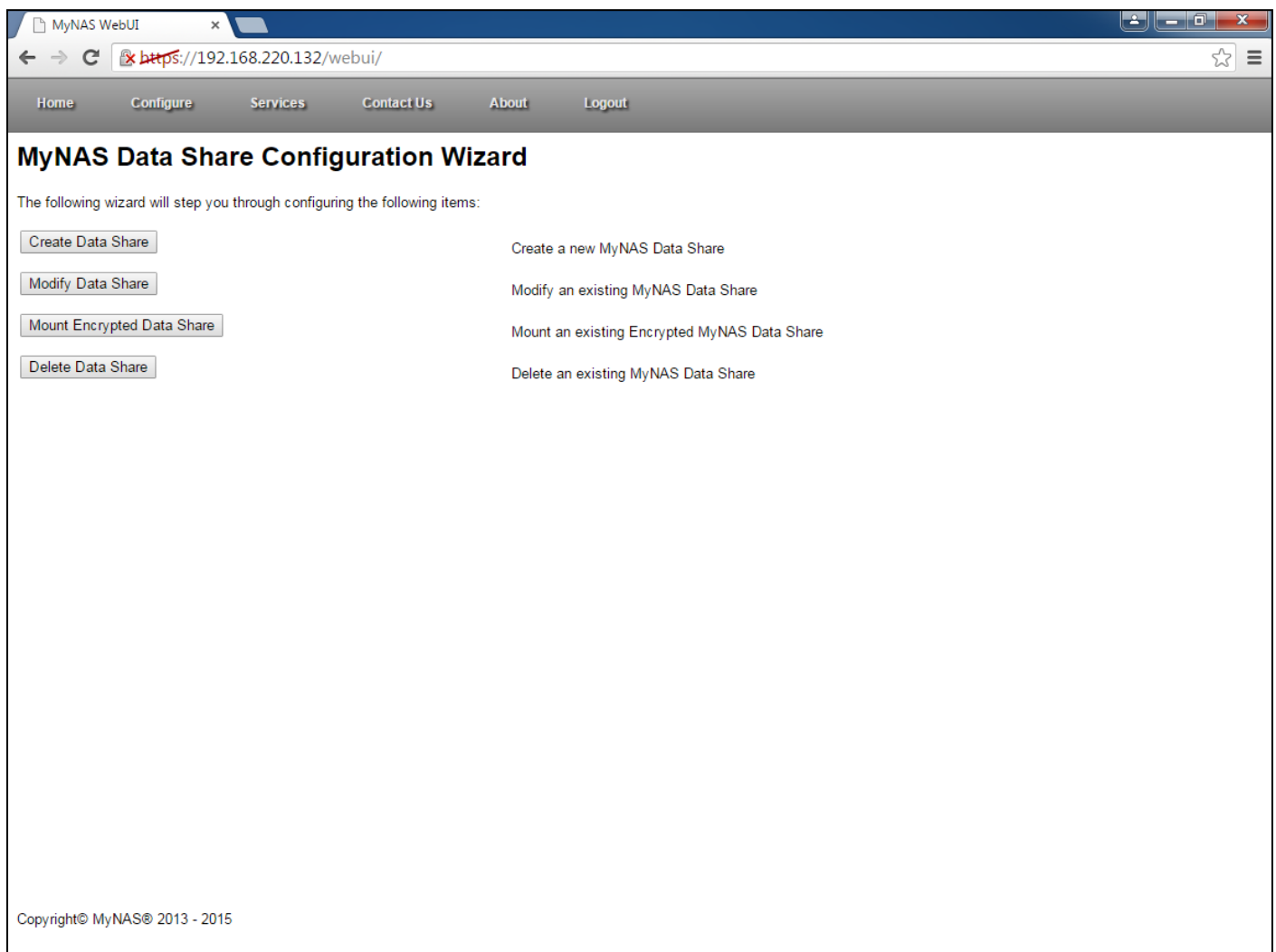
Modifying a Data Share allows the following to occur:

- Rename a Data Share to a new name including updating the share comment
- Updating the Data Share access mechanism (Windows, Apple OS X or Linux/Unix)
- Updating the access privileges for the share
- Updating the Time Machine Support
- Updating the Data Share importance
- Updating the DNLA access for the data share
- Updating the snapshot requirement for the data share

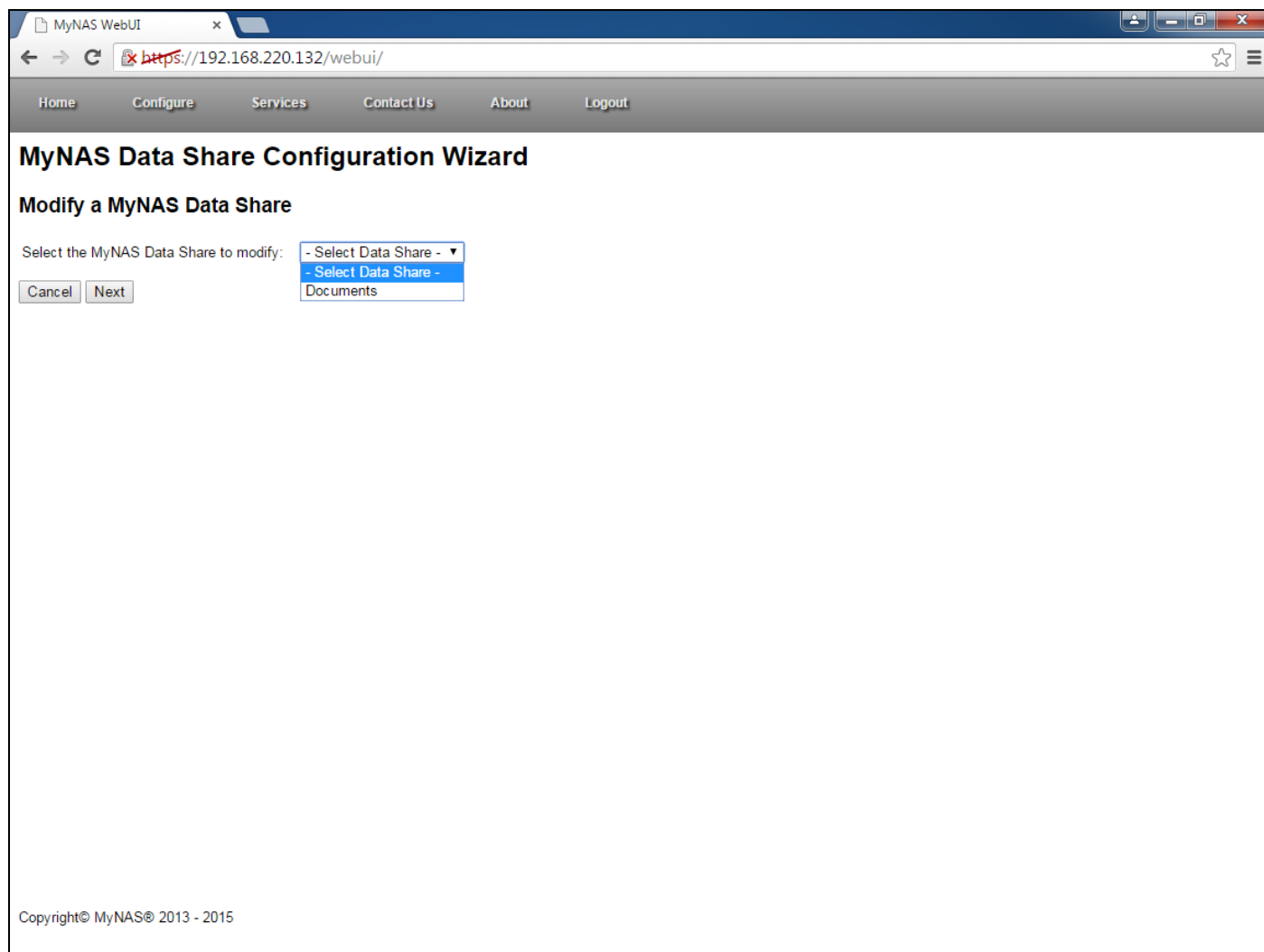
Note: Data encryption support can only be configured when creating a new Data Share. It cannot be enabled / disabled using the modify data share process due to the creation of random passphrases and supporting any already encrypted files within that data share.

Use the directions below to update the Data Share as required.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Data Shares'. Once selected, the following will be displayed:



To modify a Data Share, click the Modify Data Share button.



Select the Data Share to modify and click 'Next'

The screenshot shows a web browser window titled 'MyNAS WebUI' with the address bar displaying 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and 'Modify a MyNAS Data Share'. It contains a form with two input fields: 'Share Name' with the value 'Documents' and 'Share Comment (Optional)' with the value 'My important documents'. Below the fields are 'Cancel' and 'Next' buttons. A copyright notice 'Copyright© MyNAS® 2013 - 2015' is at the bottom left.

MyNAS WebUI x

← → ↻ ~~https://~~192.168.220.132/webui/ ☆ ≡

Home Configure Services Contact Us About Logout

MyNAS Data Share Configuration Wizard

Modify a MyNAS Data Share

Modify the MyNAS data share name or comment if required:

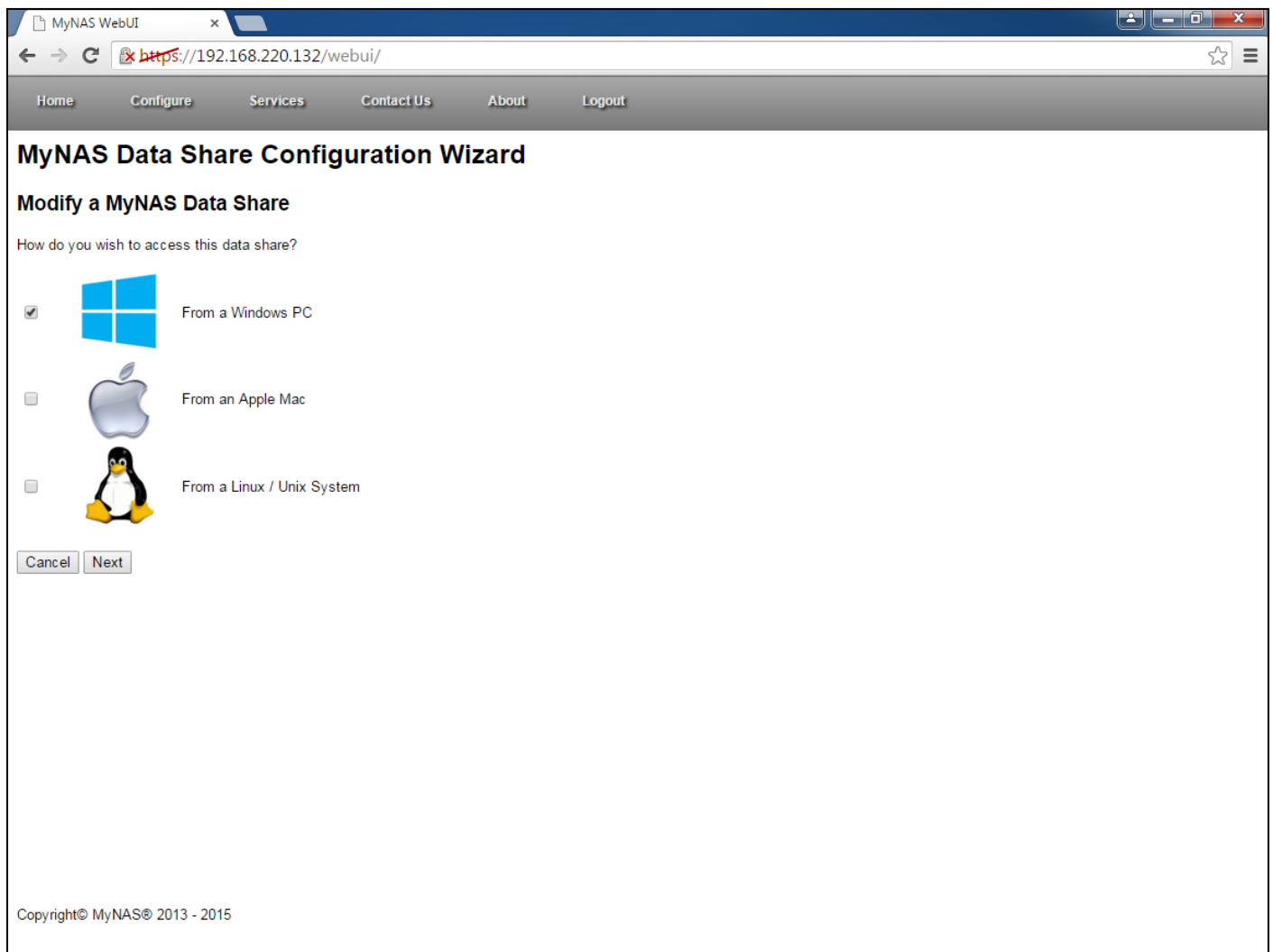
Share Name

Share Comment (Optional)

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Update the Data Share name and share comment if required. Click 'Next'

Update the Data Share access mechanism as required

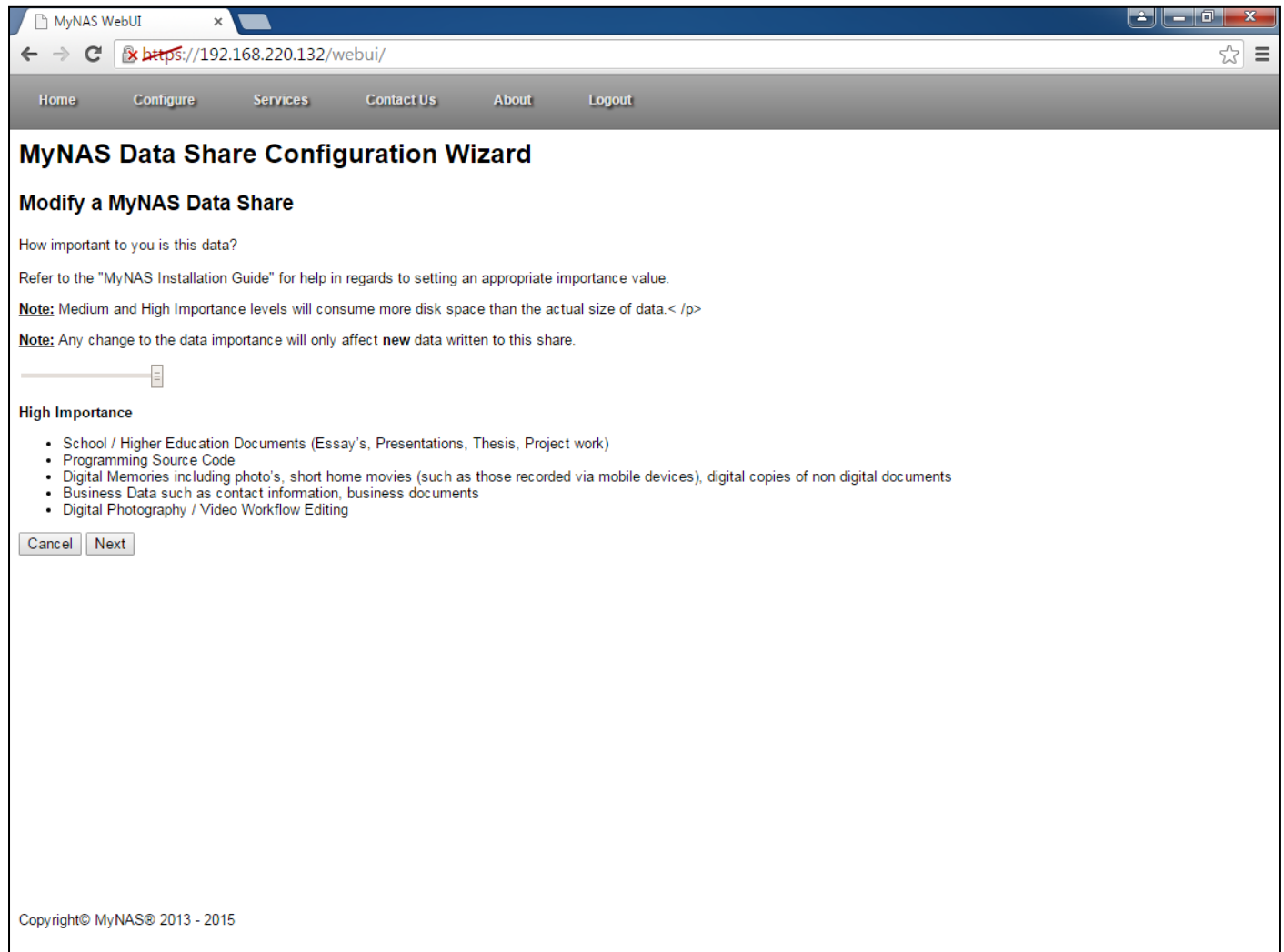


The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The navigation menu at the top includes "Home", "Configure", "Services", "Contact Us", "About", and "Logout". The main content area is titled "MyNAS Data Share Configuration Wizard" and contains the sub-header "Modify a MyNAS Data Share". Below this, the question "How do you wish to access this data share?" is displayed. There are three radio button options: "From a Windows PC" (selected), "From an Apple Mac", and "From a Linux / Unix System". Each option is accompanied by its respective logo (Windows, Apple, and Linux/Tux penguin). At the bottom of the form, there are "Cancel" and "Next" buttons. The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Once updated, click 'Next' to continue.

Update the Data Share importance for this Data Share.

Note: Any change to the data importance will only affect **new** data written to this data share



MyNAS WebUI

← → ↻ <https://192.168.220.132/webui/>

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MyNAS Data Share Configuration Wizard

Modify a MyNAS Data Share

How important to you is this data?

Refer to the "MyNAS Installation Guide" for help in regards to setting an appropriate importance value.

Note: Medium and High Importance levels will consume more disk space than the actual size of data.< /p>

Note: Any change to the data importance will only affect **new** data written to this share.

High Importance

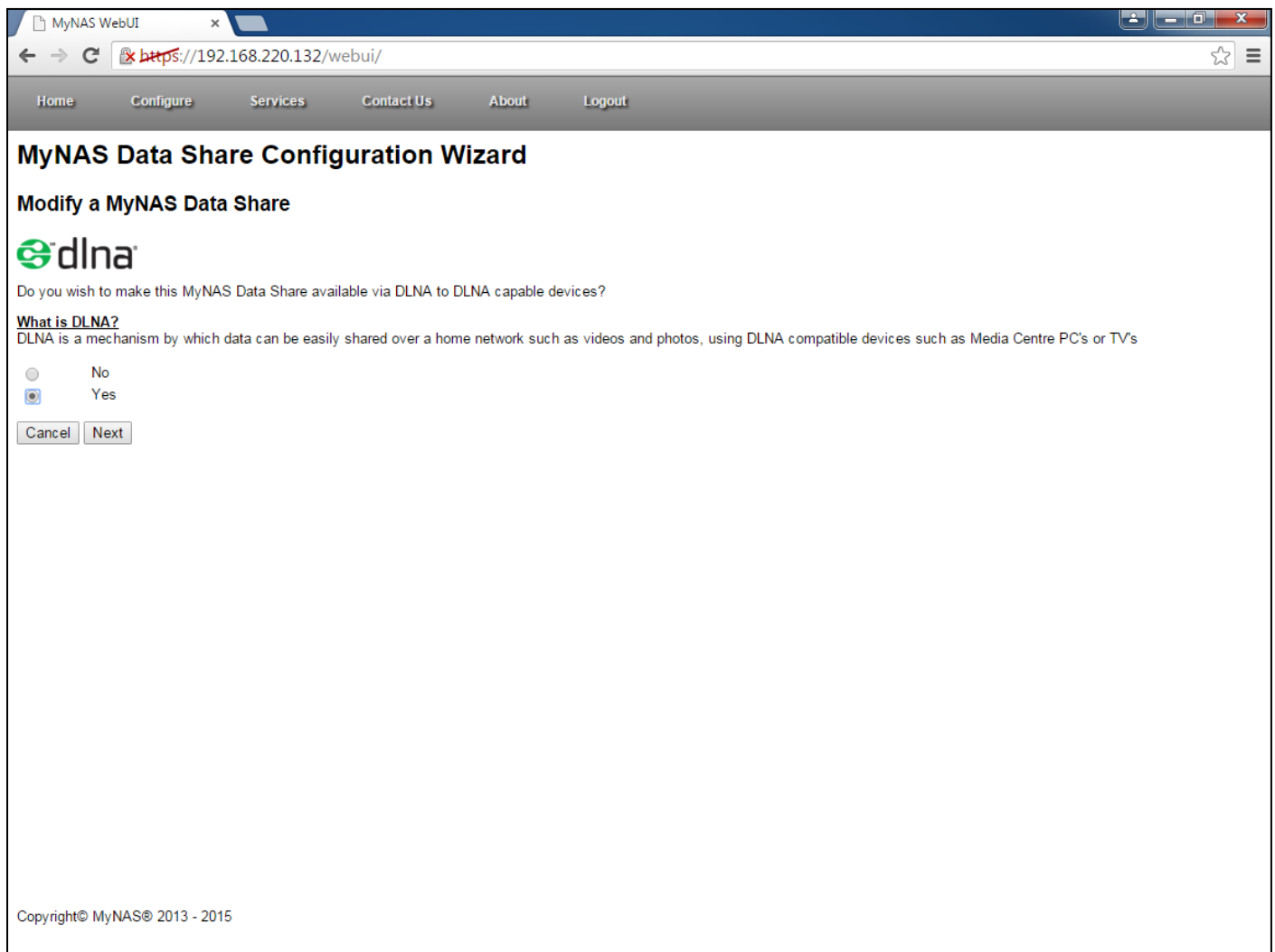
- School / Higher Education Documents (Essay's, Presentations, Thesis, Project work)
- Programming Source Code
- Digital Memories including photo's, short home movies (such as those recorded via mobile devices), digital copies of non digital documents
- Business Data such as contact information, business documents
- Digital Photography / Video Workflow Editing

Cancel Next

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Once the Data Share importance is updated, click 'Next'

Update the DLNA setting for this Data Share



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Data Share Configuration Wizard" and "Modify a MyNAS Data Share". It features the DLNA logo and a question: "Do you wish to make this MyNAS Data Share available via DLNA to DLNA capable devices?". Below this is a section titled "What is DLNA?" with a brief explanation: "DLNA is a mechanism by which data can be easily shared over a home network such as videos and photos, using DLNA compatible devices such as Media Centre PC's or TV's". There are two radio button options: "No" (unselected) and "Yes" (selected). At the bottom of the form are "Cancel" and "Next" buttons. A copyright notice "Copyright© MyNAS® 2013 - 2015" is visible in the footer.


MyNAS WebUI

`https://192.168.220.132/webui/`

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MyNAS Data Share Configuration Wizard

Modify a MyNAS Data Share



Do you wish to make this MyNAS Data Share available via DLNA to DLNA capable devices?

What is DLNA?
DLNA is a mechanism by which data can be easily shared over a home network such as videos and photos, using DLNA compatible devices such as Media Centre PC's or TV's

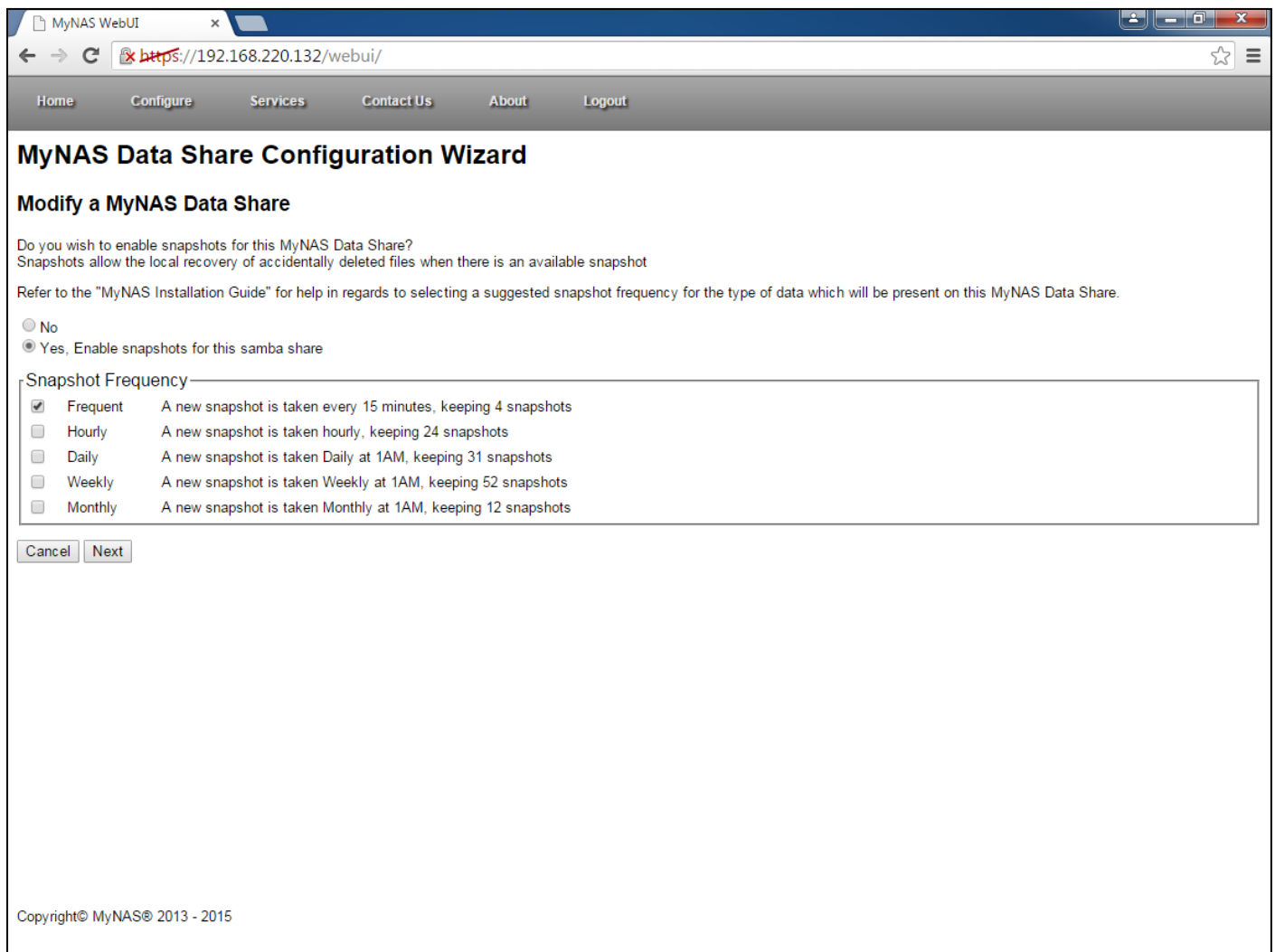
☐ No
☒ Yes

Cancel Next

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Once the Data Share DLNA support is updated, click 'Next'

Update the snapshot requirements for this Data Share:



MyNAS WebUI

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MyNAS Data Share Configuration Wizard

Modify a MyNAS Data Share

Do you wish to enable snapshots for this MyNAS Data Share?
Snapshots allow the local recovery of accidentally deleted files when there is an available snapshot

Refer to the "MyNAS Installation Guide" for help in regards to selecting a suggested snapshot frequency for the type of data which will be present on this MyNAS Data Share.

☐ No
☒ Yes, Enable snapshots for this samba share

Snapshot Frequency

<input checked="" type="checkbox"/> Frequent	A new snapshot is taken every 15 minutes, keeping 4 snapshots
<input type="checkbox"/> Hourly	A new snapshot is taken hourly, keeping 24 snapshots
<input type="checkbox"/> Daily	A new snapshot is taken Daily at 1AM, keeping 31 snapshots
<input type="checkbox"/> Weekly	A new snapshot is taken Weekly at 1AM, keeping 52 snapshots
<input type="checkbox"/> Monthly	A new snapshot is taken Monthly at 1AM, keeping 12 snapshots

Cancel Next

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Once the Data Share snapshot requirements are updated, click 'Next'

Confirm all the required changes for this Data Share:

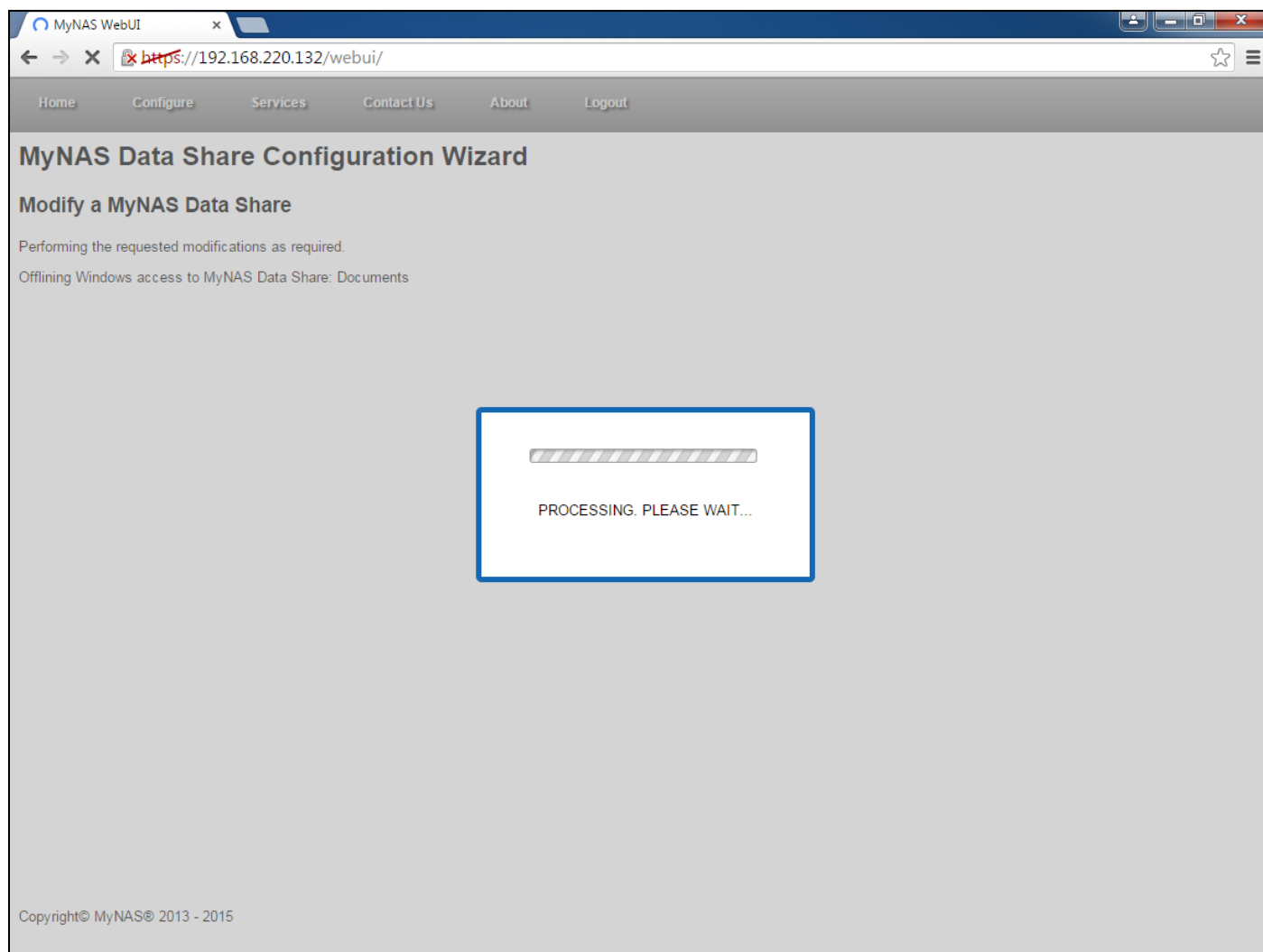
The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled 'MyNAS WebUI'. The navigation menu at the top includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS Data Share Configuration Wizard'. Below this is the sub-heading 'Modify a MyNAS Data Share'. A message states: 'The following settings have been requested for the modification of an existing MyNAS Data Share. Please confirm the requested items below:'. The settings are listed in two columns:

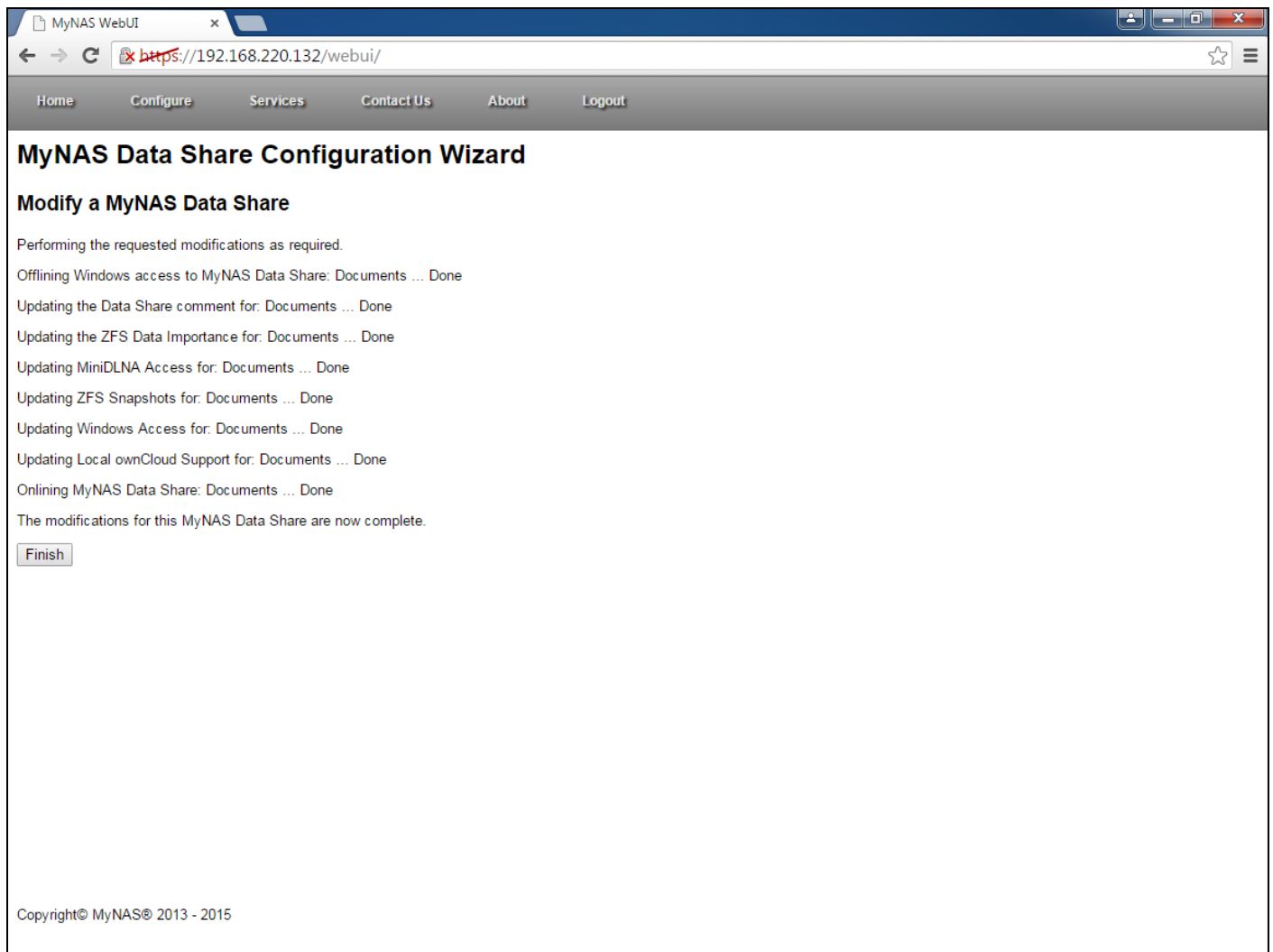
Modified Data Share Name:	Documents
Modified Data Share Comment:	My important documents
Modified Data Share Platform Access:	Windows: Yes Apple / OS X: No Linux / Unix: No
Modified Windows Data Share Password Protected:	No
Modified Windows Data Share Access Permissions:	Default access permissions will be used for everyone
Modified Data Share Data Importance:	High
Modified Data Share DLNA Access:	Yes
Modified Data Share Snapshots:	Yes - frequent
Modified Local ownCloud Access:	No

At the bottom of the form are two buttons: 'Cancel' and 'Save Settings'. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

If all changes are OK, click 'Save Settings'.

MyNAS will now process the changes are required



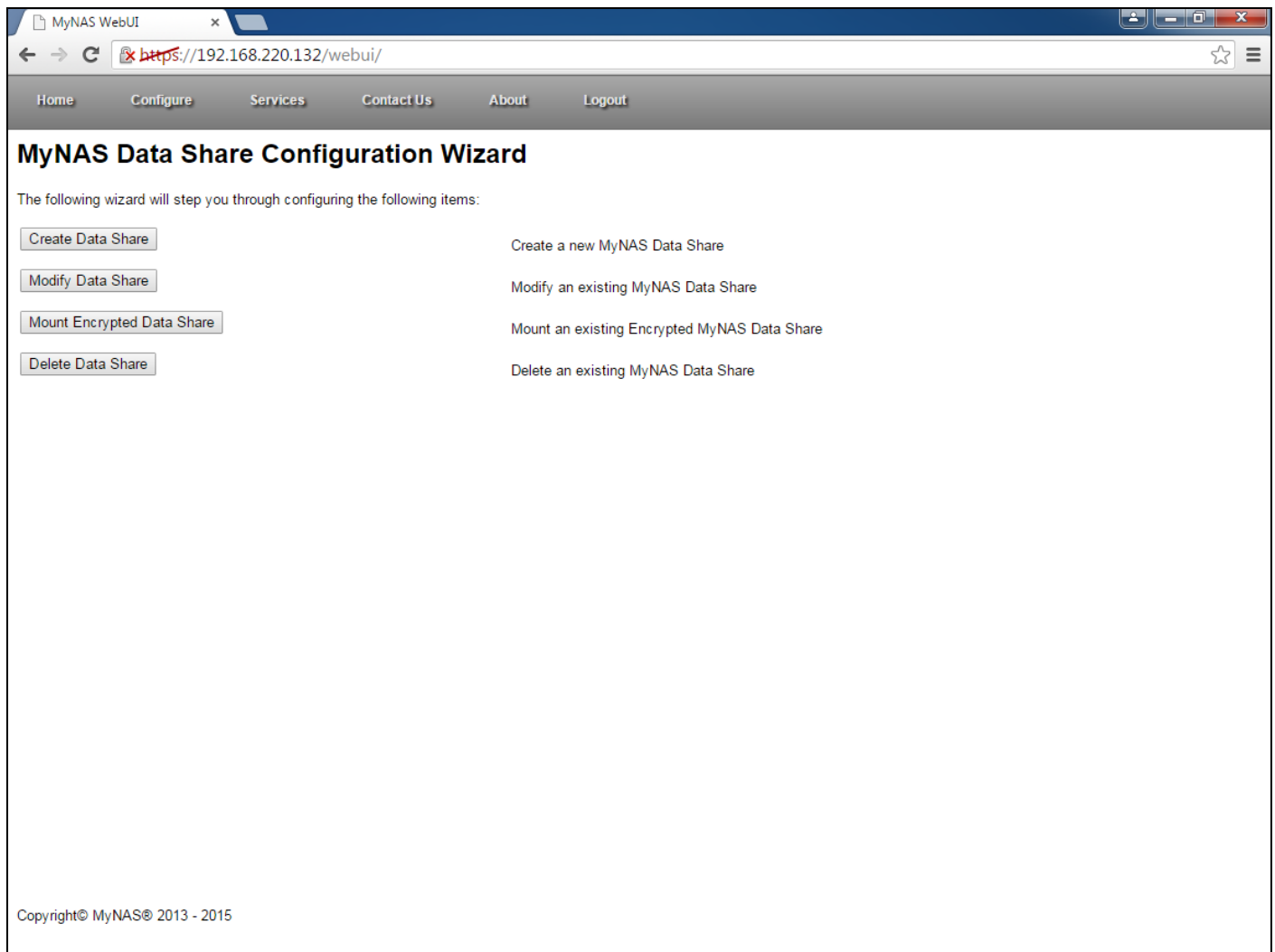


Once all the changes are complete, click 'Finish' to return the main MyNAS console.

Delete a Data Share

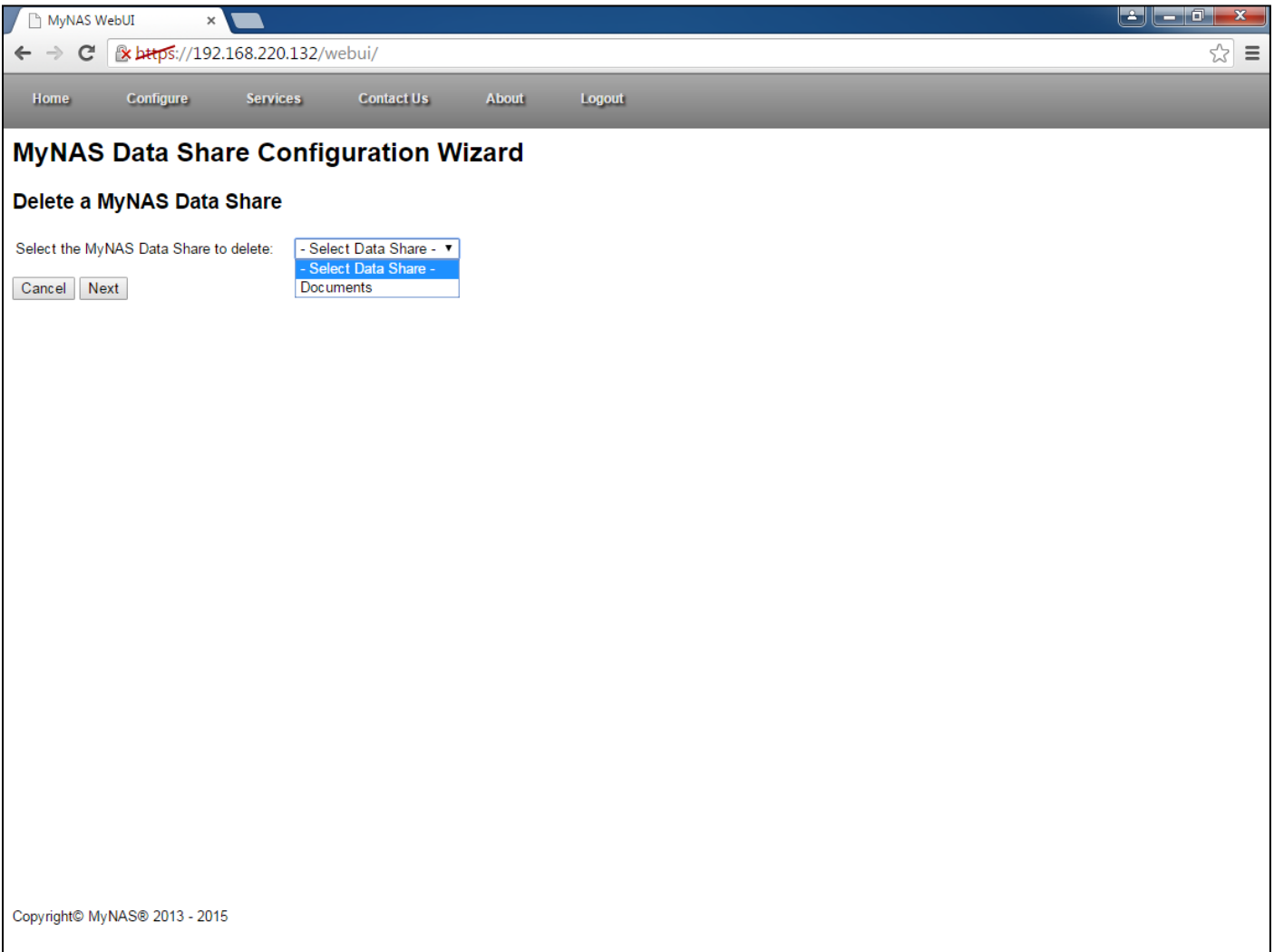
Deleting a Data Share is a destructive process for the data on that share. Follow the directions below to delete a MyNAS Data Share.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Data Shares'. Once selected, the following will be displayed:



Click 'Delete Data Share' to perform the delete operation

Select the Data Share to delete and click 'Next'



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The browser's navigation bar includes links for 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and contains the sub-header 'Delete a MyNAS Data Share'. Below this, a label reads 'Select the MyNAS Data Share to delete:'. To the right of this label is a dropdown menu with the following options: '- Select Data Share -', '- Select Data Share -', and 'Documents'. The 'Documents' option is currently selected. Below the dropdown menu are two buttons: 'Cancel' and 'Next'. At the bottom left of the page, the copyright notice 'Copyright© MyNAS® 2013 - 2015' is visible.

MyNAS WebUI

https://192.168.220.132/webui/

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MyNAS Data Share Configuration Wizard

Delete a MyNAS Data Share

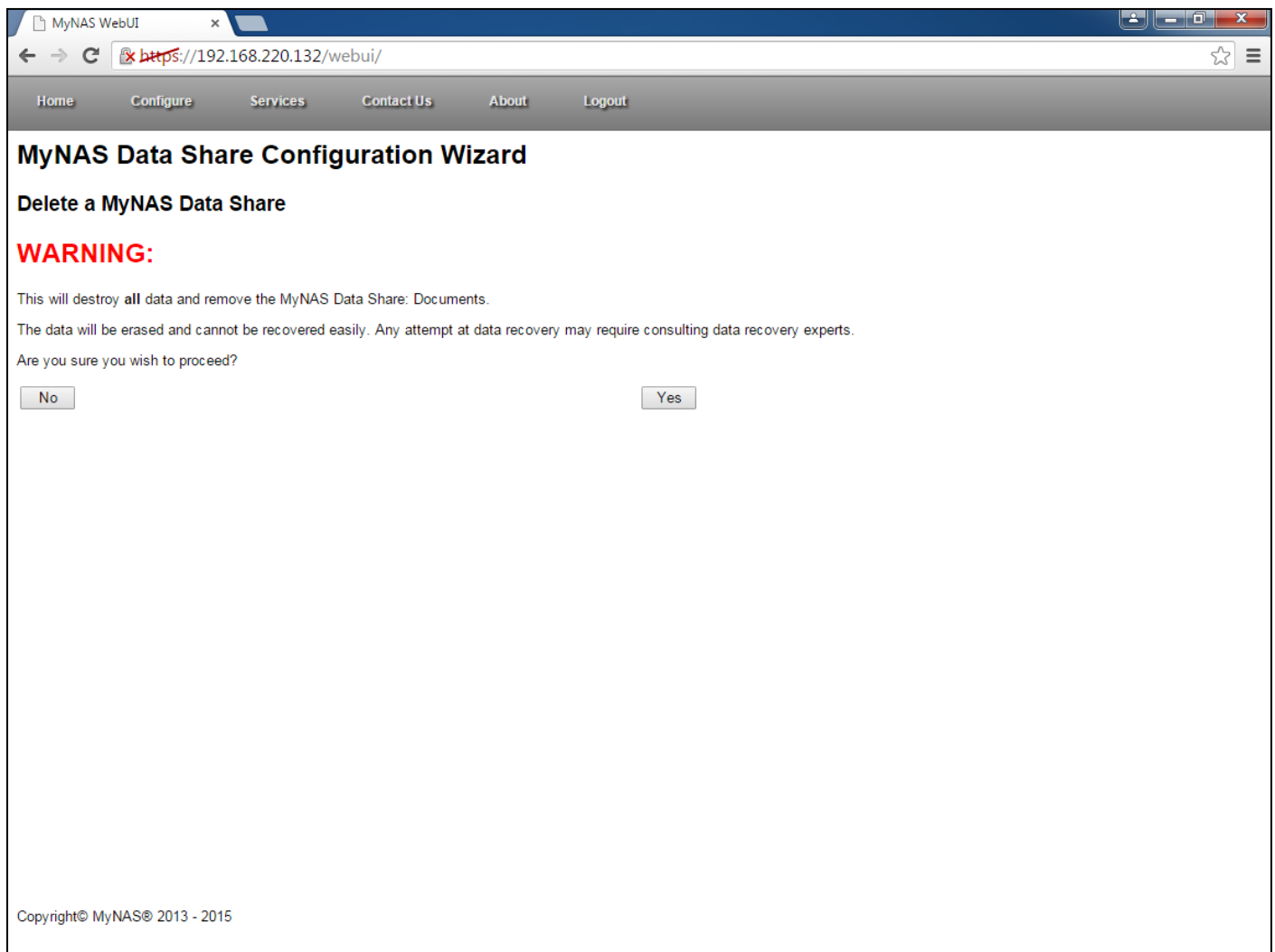
Select the MyNAS Data Share to delete:

- Select Data Share -
- Select Data Share -
Documents

Cancel Next

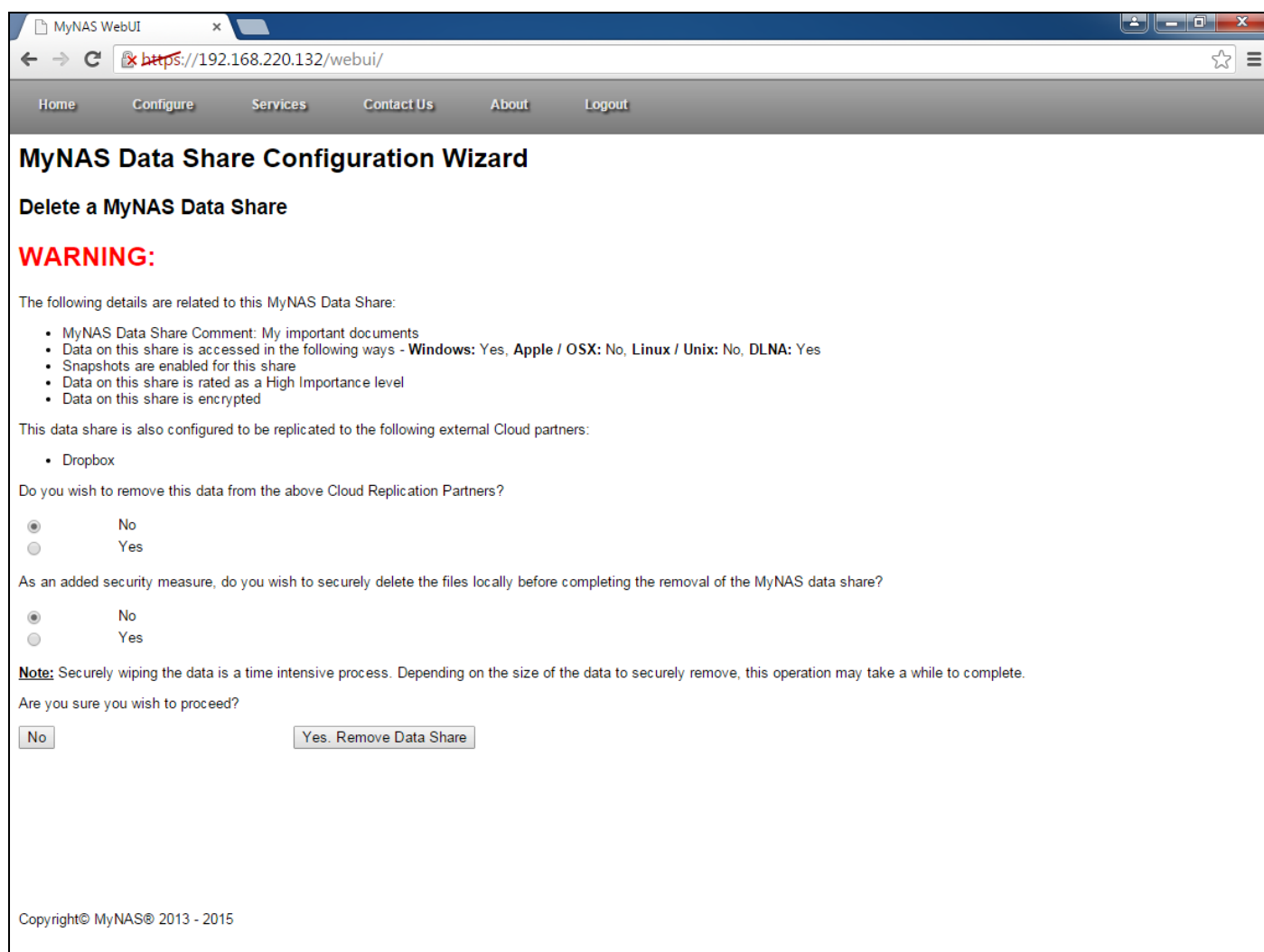
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A warning will be displayed regarding the destructive nature of performing the delete of the Data Share:



If you are sure this is the Data Share to delete, click 'Yes' to continue

MyNAS will now prompt a second time regarding the removal of the Data Share as detailed below:



MyNAS WebUI

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MyNAS Data Share Configuration Wizard

Delete a MyNAS Data Share

WARNING:

The following details are related to this MyNAS Data Share:

- MyNAS Data Share Comment: My important documents
- Data on this share is accessed in the following ways - **Windows:** Yes, **Apple / OSX:** No, **Linux / Unix:** No, **DLNA:** Yes
- Snapshots are enabled for this share
- Data on this share is rated as a High Importance level
- Data on this share is encrypted

This data share is also configured to be replicated to the following external Cloud partners:

- Dropbox

Do you wish to remove this data from the above Cloud Replication Partners?

☒ No
☐ Yes

As an added security measure, do you wish to securely delete the files locally before completing the removal of the MyNAS data share?

☒ No
☐ Yes

Note: Securely wiping the data is a time intensive process. Depending on the size of the data to securely remove, this operation may take a while to complete.

Are you sure you wish to proceed?

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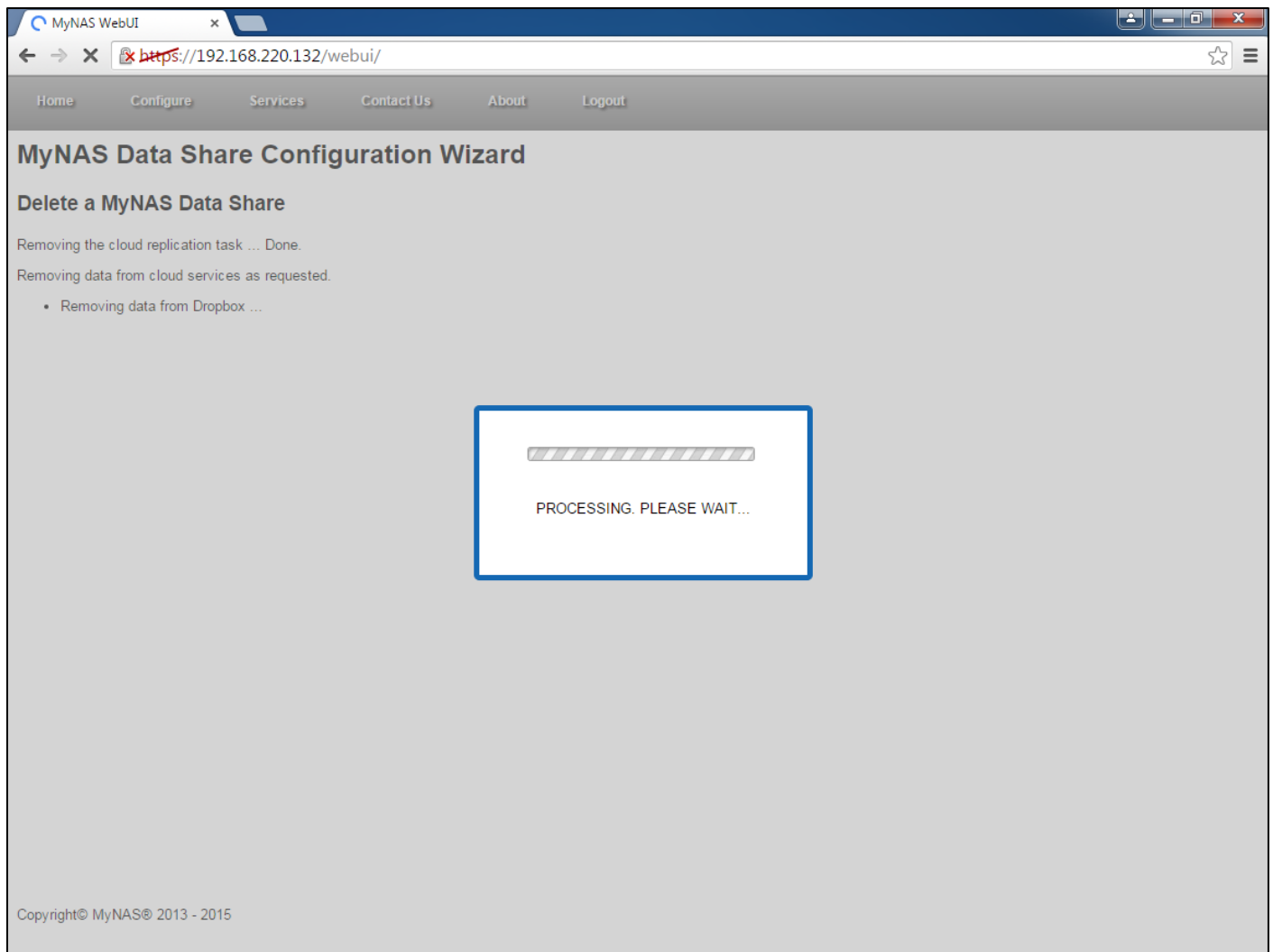
Specific details regarding this MyNAS Data Share will be displayed to help advise and inform you of the data that is present on this data share.

If this Data Share is replicated to a Cloud Replication Partner, the partners will also be displayed, with an option asking do you wish to also remove the data from the Cloud Replication Partners. Click yes to also perform this operation.

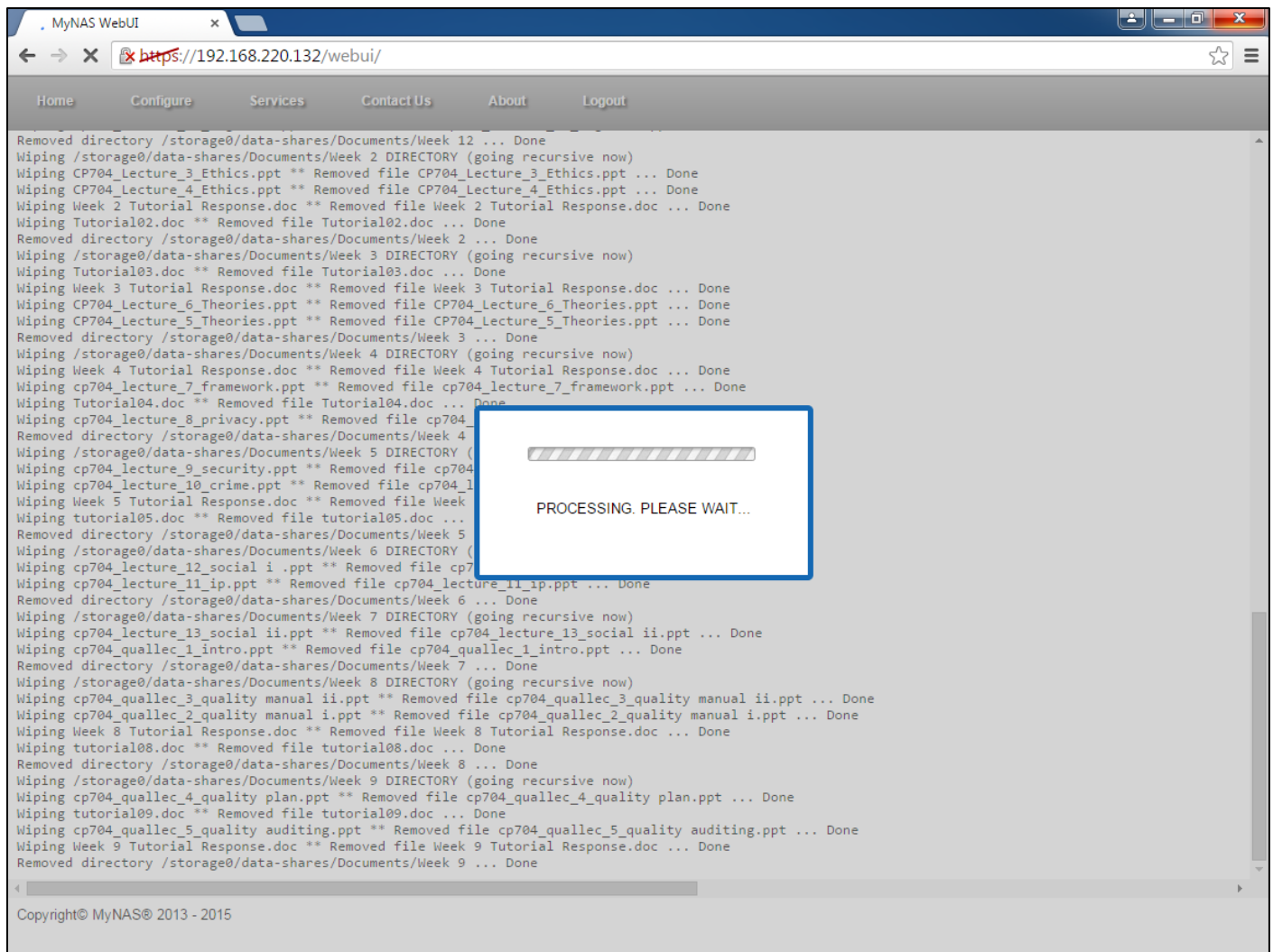
MyNAS also provides the option to securely erase the selected data share. Click yes to also perform this operation.

Note: The secure erase operation is a disk and time intensive process. Allow adequate time for the erase process to complete.

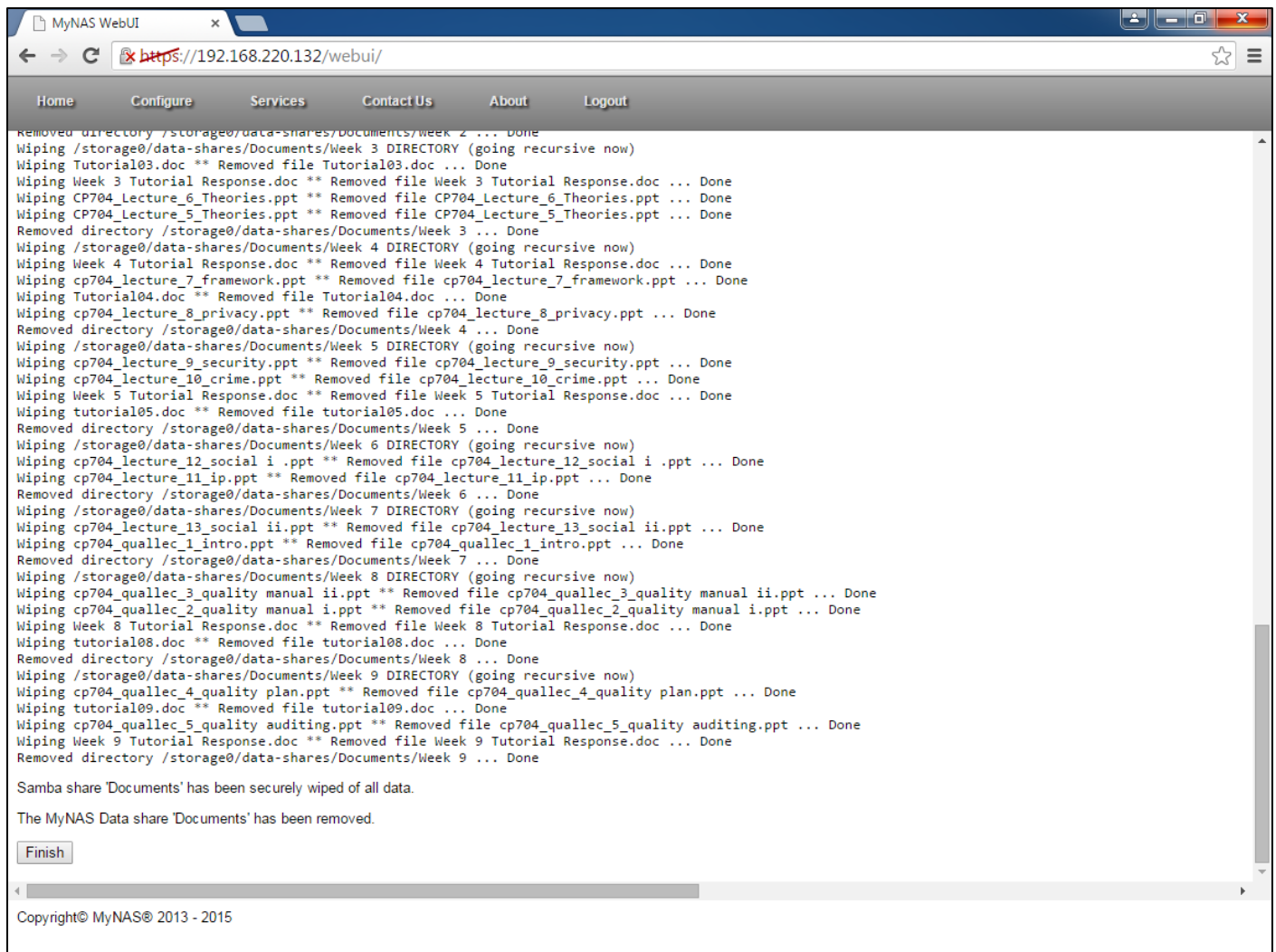
If all is OK to remove this data share, click 'Yes. Remove Data Share' to complete the data share deletion.



If the Data Share was configured for cloud access, and removal of data from the cloud was selected, this data will be removed first.



If Secure Data removal was selected, the deletion process will individually wipe each file in the data share. Once the secure data remove is complete, the data share delete process will complete:

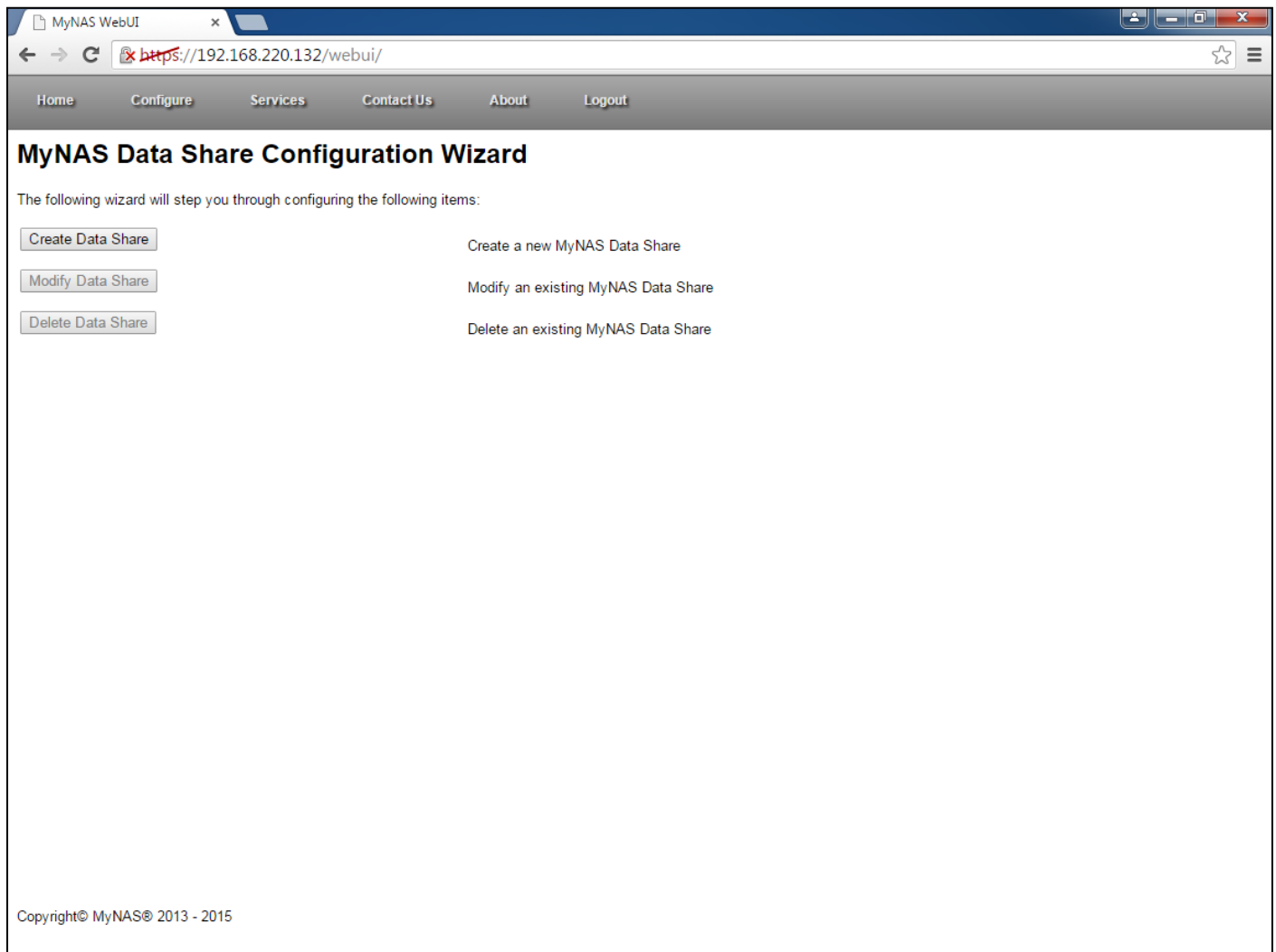


Once the removal is complete, click the 'Finish' button to finish the deletion process.

MyNAS® Storage Appliance Time Machine Support

MyNAS Data Shares can provide the support for Apple Time Machine allowing backups of your OS X systems. Typically however, it is recommended that a separate MyNAS Data Share be created specifically just for Time Machine. Follow the directions below for creating a MyNAS Data Share for Time Machine.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Data Shares'. Once selected, the following will be displayed:



To create a Data Share, click on the 'Create Data Share' button.

Depending on the ZFS Pool configuration, if there is more than 1 ZFS Pool configured, MyNAS will ask which ZFS Pool should be used for the Data Share creation:

The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and contains the heading 'Create a new MyNAS Data Share'. Below this, the text 'Select the ZFS Pool to use:' is followed by a dropdown menu. The dropdown menu is open, showing the following options: '- Select ZFS Pool -', '- Select ZFS Pool -', 'storage0', and 'storage1'. The 'storage0' option is currently selected. To the left of the dropdown menu are two buttons: 'Cancel' and 'Next'. At the bottom left of the page, the copyright notice 'Copyright© MyNAS® 2013 - 2015' is visible.

MyNAS WebUI

https://192.168.220.132/webui/

Home Configure Services Contact Us About Logout

MyNAS Data Share Configuration Wizard

Create a new MyNAS Data Share

Select the ZFS Pool to use:

Cancel Next

- Select ZFS Pool -
- Select ZFS Pool -
storage0
storage1

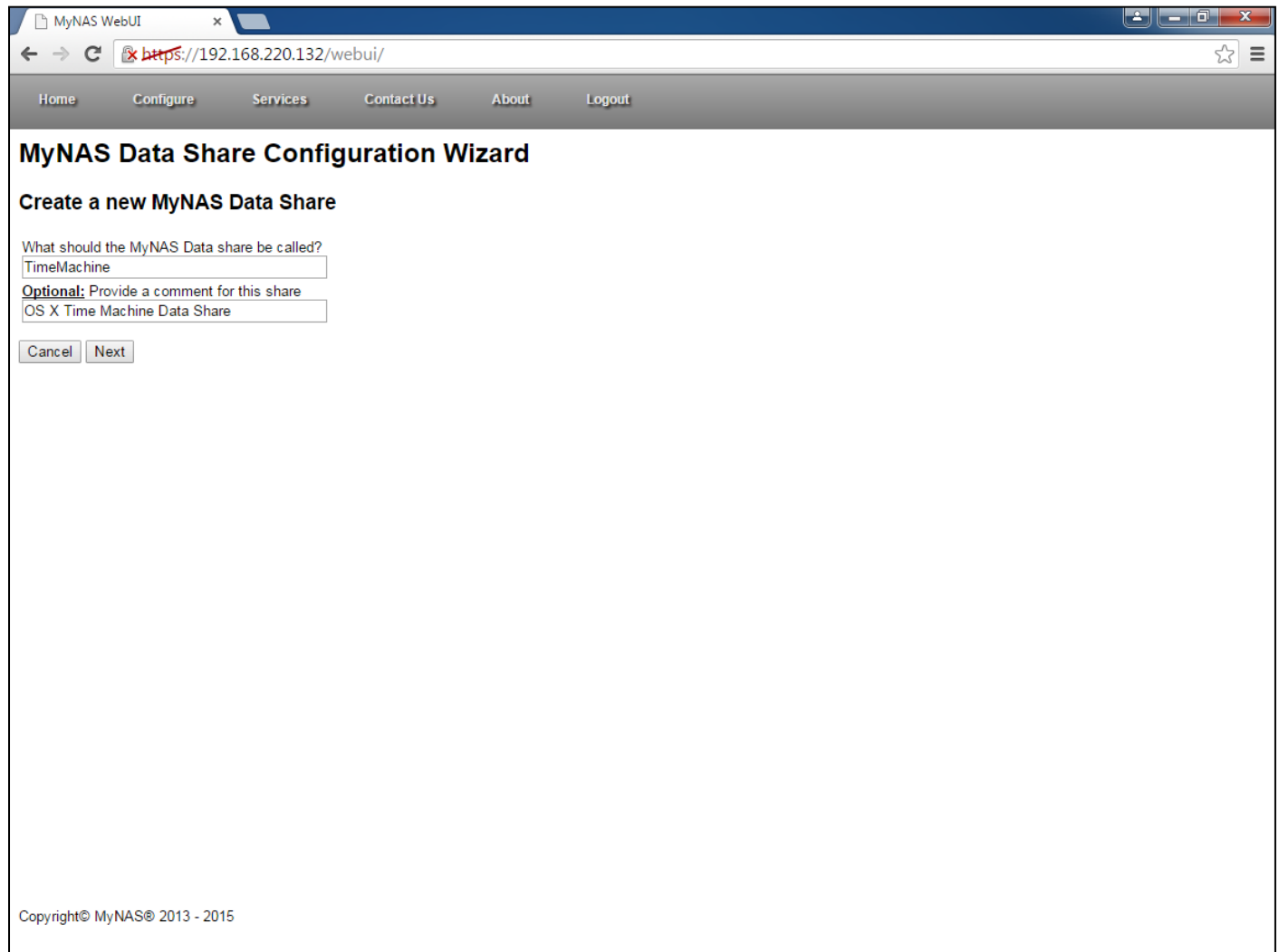
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Select the appropriate ZFS Pool and click Next

Configure the Data Share with the appropriate details to identify this Data Share

Note: The Data Share name can only contain alpha-numeric characters, including '-' and '_'

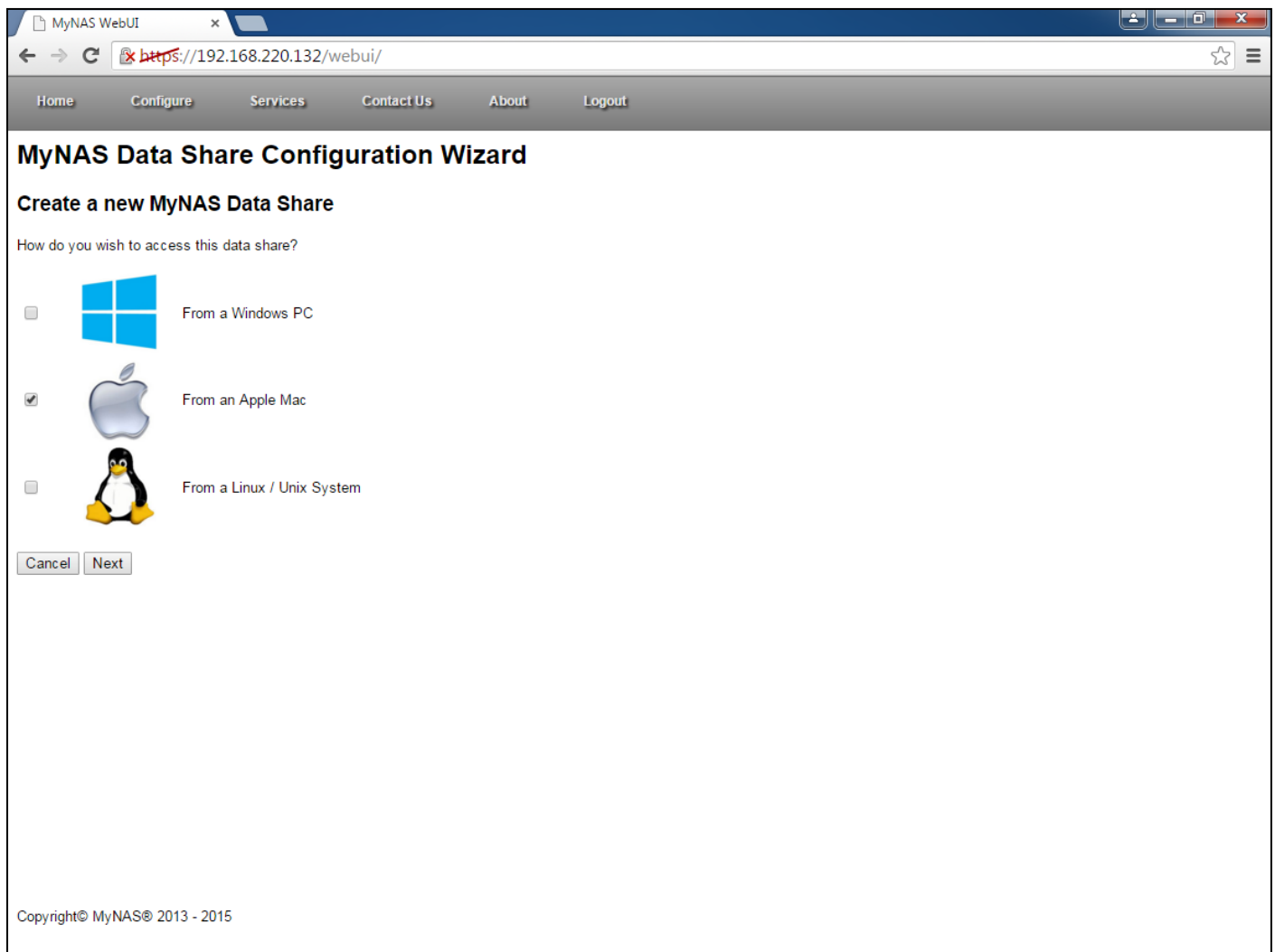
Note: The Data Share comment is as per the share name, however also including spaces and '.'



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and contains the section 'Create a new MyNAS Data Share'. It asks 'What should the MyNAS Data share be called?' with a text input field containing 'TimeMachine'. Below this, it says 'Optional: Provide a comment for this share' with a text input field containing 'OS X Time Machine Data Share'. At the bottom of the form are 'Cancel' and 'Next' buttons. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

Once the new Data Share details have been configured, click 'Next'

Select the access mechanism as from an Apple Mac



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Data Share Configuration Wizard" and "Create a new MyNAS Data Share". Below this, the question "How do you wish to access this data share?" is posed. There are three options, each with a checkbox and an icon: "From a Windows PC" with a Windows logo icon, "From an Apple Mac" with an Apple logo icon (which is checked), and "From a Linux / Unix System" with a Tux penguin icon. At the bottom of the options are "Cancel" and "Next" buttons. The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Click 'Next' to continue

Select 'Yes' to enable Time Machine Support

MyNAS WebUI

← → ↻ ~~https://~~192.168.220.132/webui/ ☆ ☰

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MyNAS Data Share Configuration Wizard

Create a new MyNAS Data Share

Do you wish to enable Apple Time Machine support for this data share?

☐ No

☒ Yes

Cancel Next

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Click 'Next' to continue, and through all remaining wizard screens leaving the remaining options at their defaults.

Confirm the settings for this Data Share for just Apple access and Time Machine support:

MyNAS WebUI

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MyNAS Data Share Configuration Wizard

Create a new MyNAS Data Share

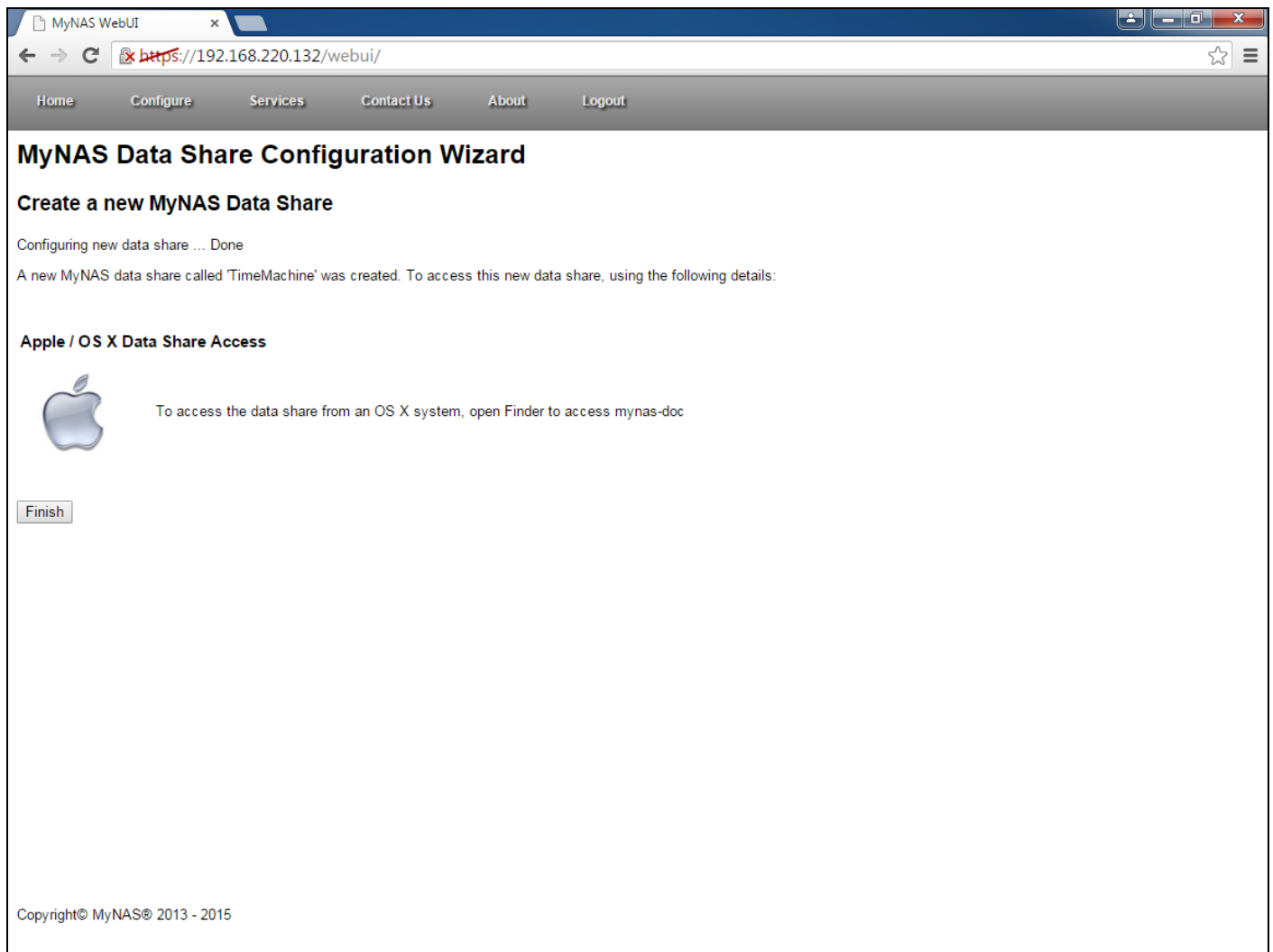
The following settings have been requested for the creation of a new data share. Please confirm the requested items below:

ZFS Storage Pool:	storage0
Data Share Name:	TimeMachine
Data Share Comment:	OS X Time Machine Data Share
Data Share Platform Access:	Windows: No Apple / OS X: Yes Linux / Unix: No
Apple Time Machine Support:	Yes
Data Share Data Importance:	Low
Data Share DLNA Access:	No
Data Share Snapshots:	No
Local ownCloud Access:	No

Cancel Save Settings

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Once confirmed, click 'Save Settings' and the new Data Share will be created.

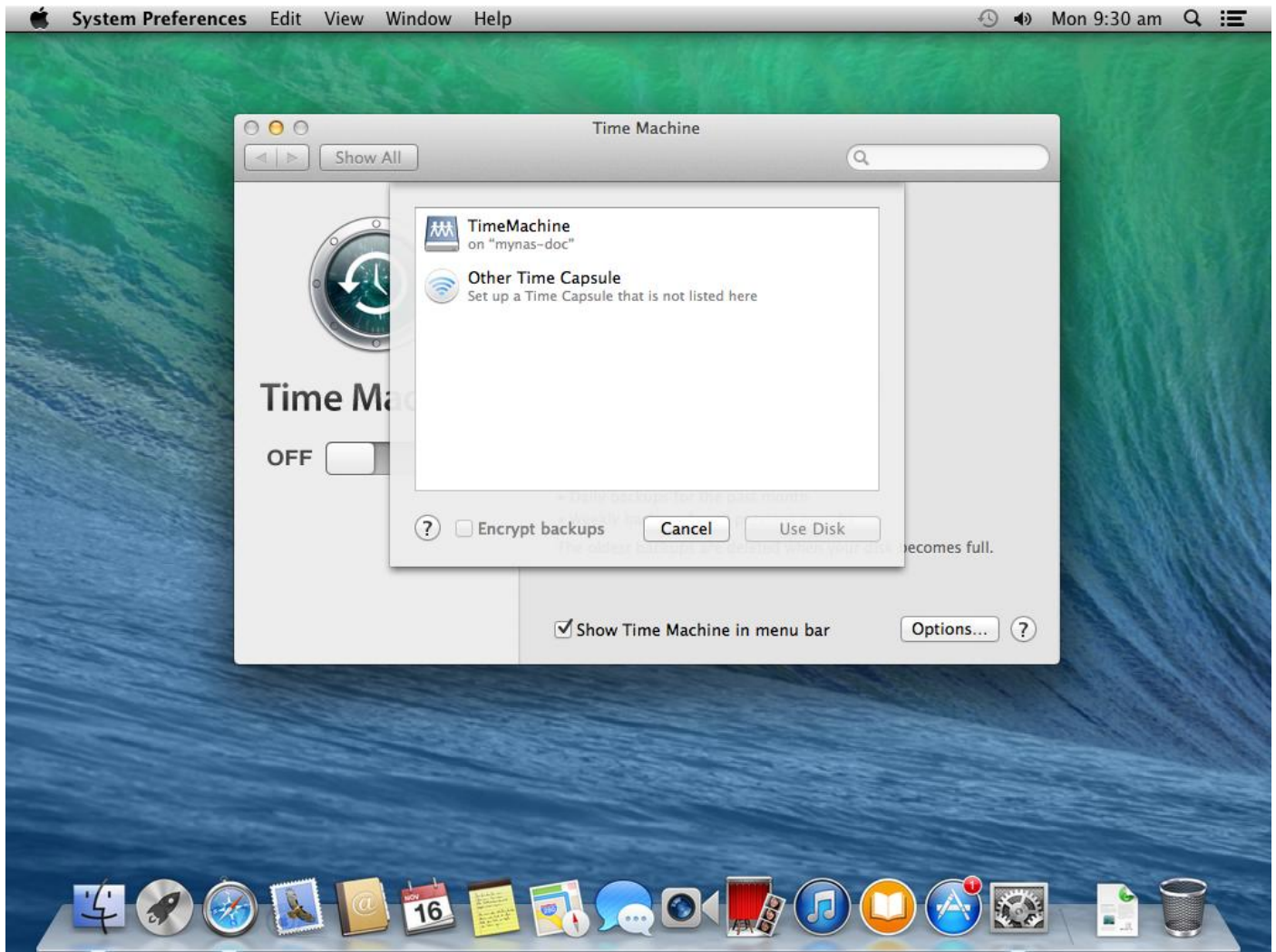


Click 'Finish' to close the Data Share wizard.

From OS X, launch the Time Machine application:

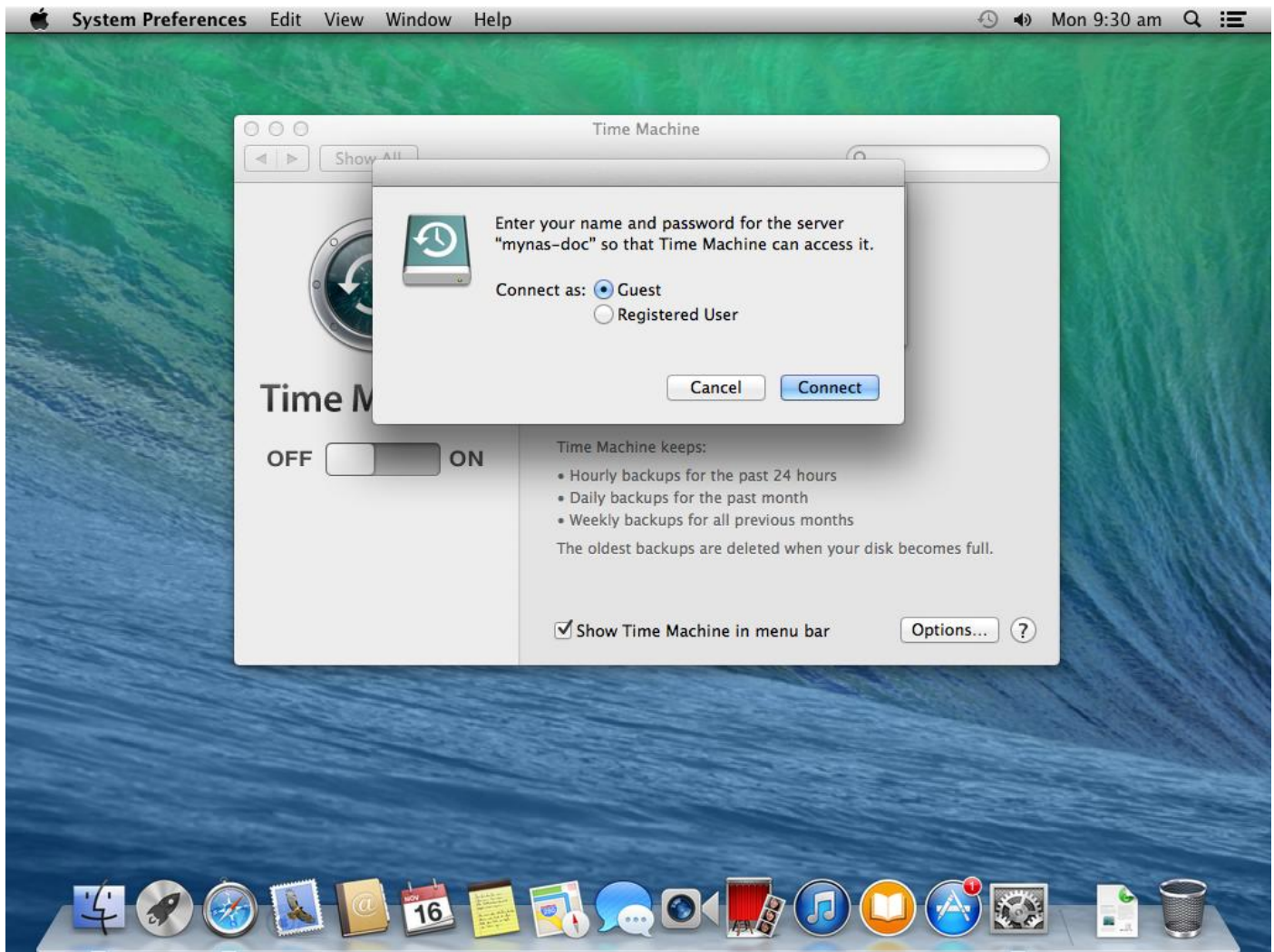


Click on the 'Select Backup Disk' button to select the Time Machine Data Share



Select the Time Machine Data Share and click the 'Use Disk' button. Optionally, check the 'Encrypt backups' checkbox if you wish to have OS X encrypt your Time Machine backups.

Time Machine will now prompt for a user to connect to the Time Machine Data Share. As no username was used when the data share was created, use the Guest account for the backups.

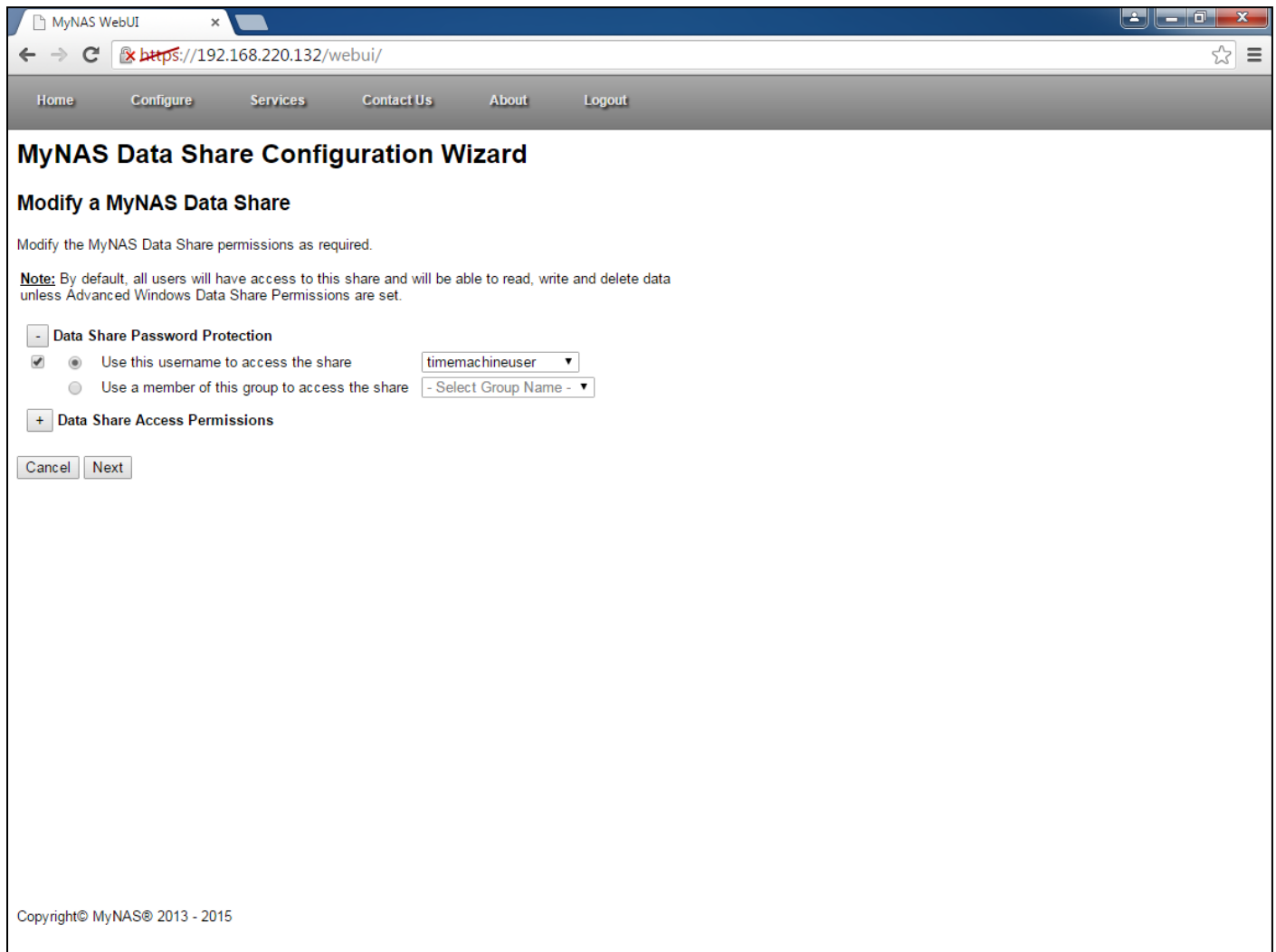


Click the 'Connect' button to complete the Time Machine configuration



Time Machine is now configured to use MyNAS as its backup storage device.

If you do wish to connect with a specific user account, use the MyNAS Configure Users & Groups Wizard to add a specific user account and then modify this Time Machine Data Share to allow access by that specific user.



The screenshot shows a web browser window titled 'MyNAS WebUI' with the address bar displaying 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Data Share Configuration Wizard' and 'Modify a MyNAS Data Share'. It instructs the user to 'Modify the MyNAS Data Share permissions as required.' and includes a note: 'By default, all users will have access to this share and will be able to read, write and delete data unless Advanced Windows Data Share Permissions are set.' The configuration options are: 'Data Share Password Protection' (checked), 'Use this username to access the share' (selected with radio button, dropdown menu shows 'timemachineuser'), and 'Use a member of this group to access the share' (unselected with radio button, dropdown menu shows '- Select Group Name -'). There is also a '+ Data Share Access Permissions' section. At the bottom are 'Cancel' and 'Next' buttons. The footer text is 'Copyright© MyNAS® 2013 - 2015'.

MyNAS WebUI x

← → ↻ <https://192.168.220.132/webui/> ☆ ☰

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MyNAS Data Share Configuration Wizard

Modify a MyNAS Data Share

Modify the MyNAS Data Share permissions as required.

Note: By default, all users will have access to this share and will be able to read, write and delete data unless Advanced Windows Data Share Permissions are set.

☐ Data Share Password Protection

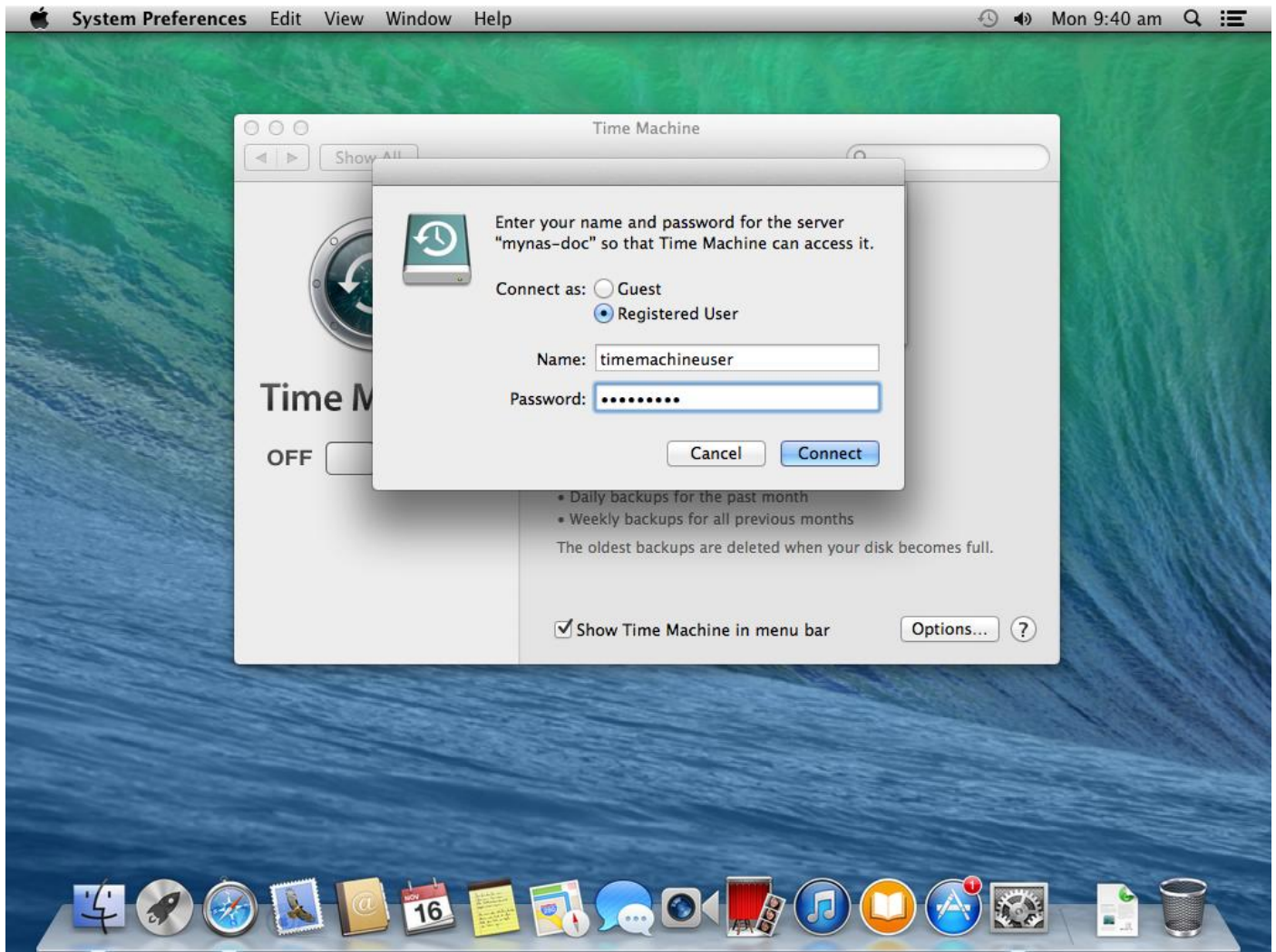
☒ Use this username to access the share

☐ Use a member of this group to access the share

☐ Data Share Access Permissions

Cancel Next

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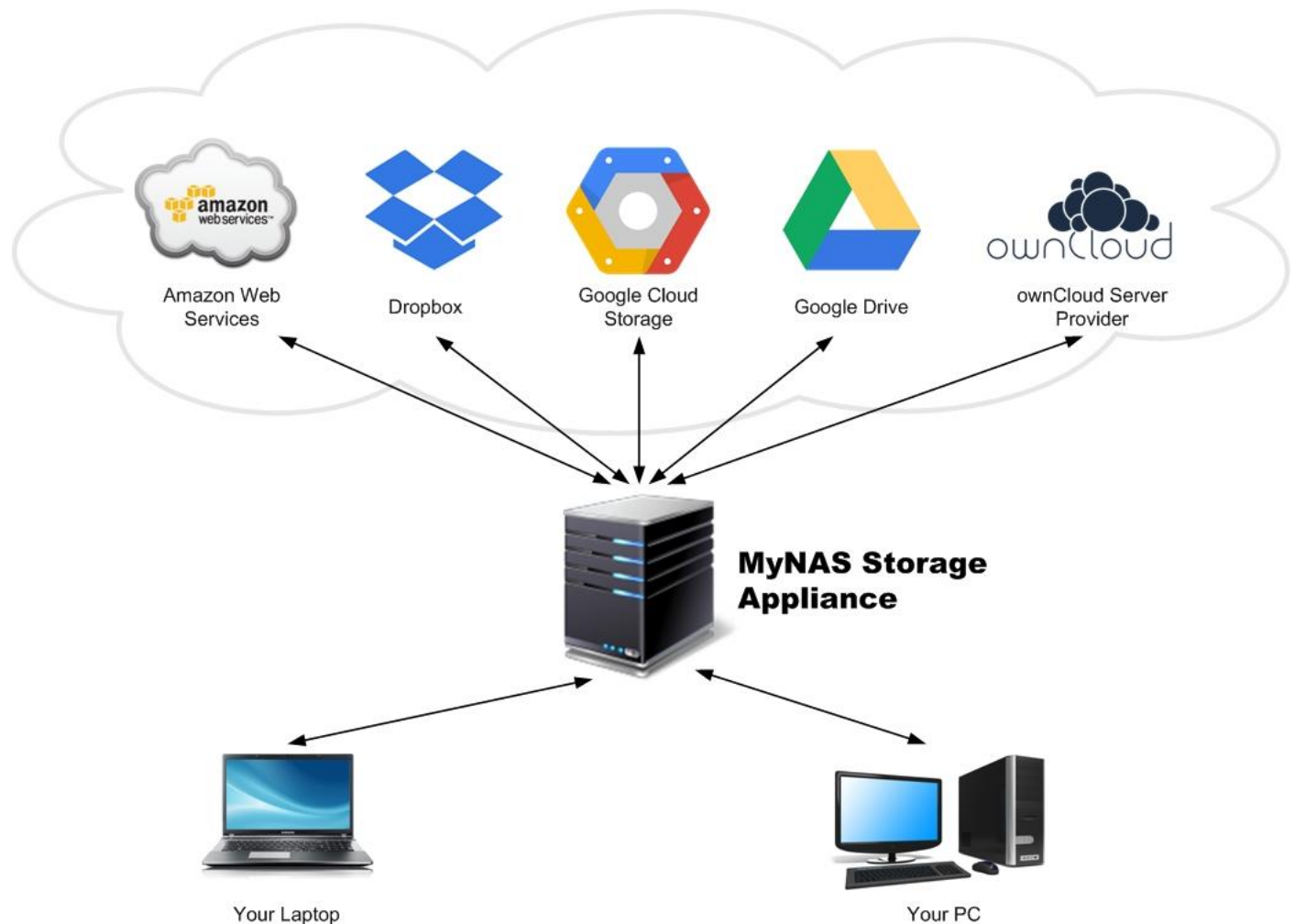
Click Connect to configure Time Machine to use this registered user

Time machine will now be configured and it will configure itself to perform a backup of your OS X system to the MyNAS Time Machine Data Share:



MyNAS® Storage Appliance Cloud Replication

MyNAS provides the capability for you to replicate any selected Data Share with encrypted or un-encrypted data to a MyNAS Storage Appliance supported Cloud Storage provider. The diagram below illustrates the Cloud Storage providers that are currently integrated into MyNAS:



When replicating data to the Cloud Replication Partners, all access where possible will be secured using SSL, keeping your uploads safe.

Important

Uploading data to a Cloud Provider will use your Internet bandwidth and your data allowance from your ISP.

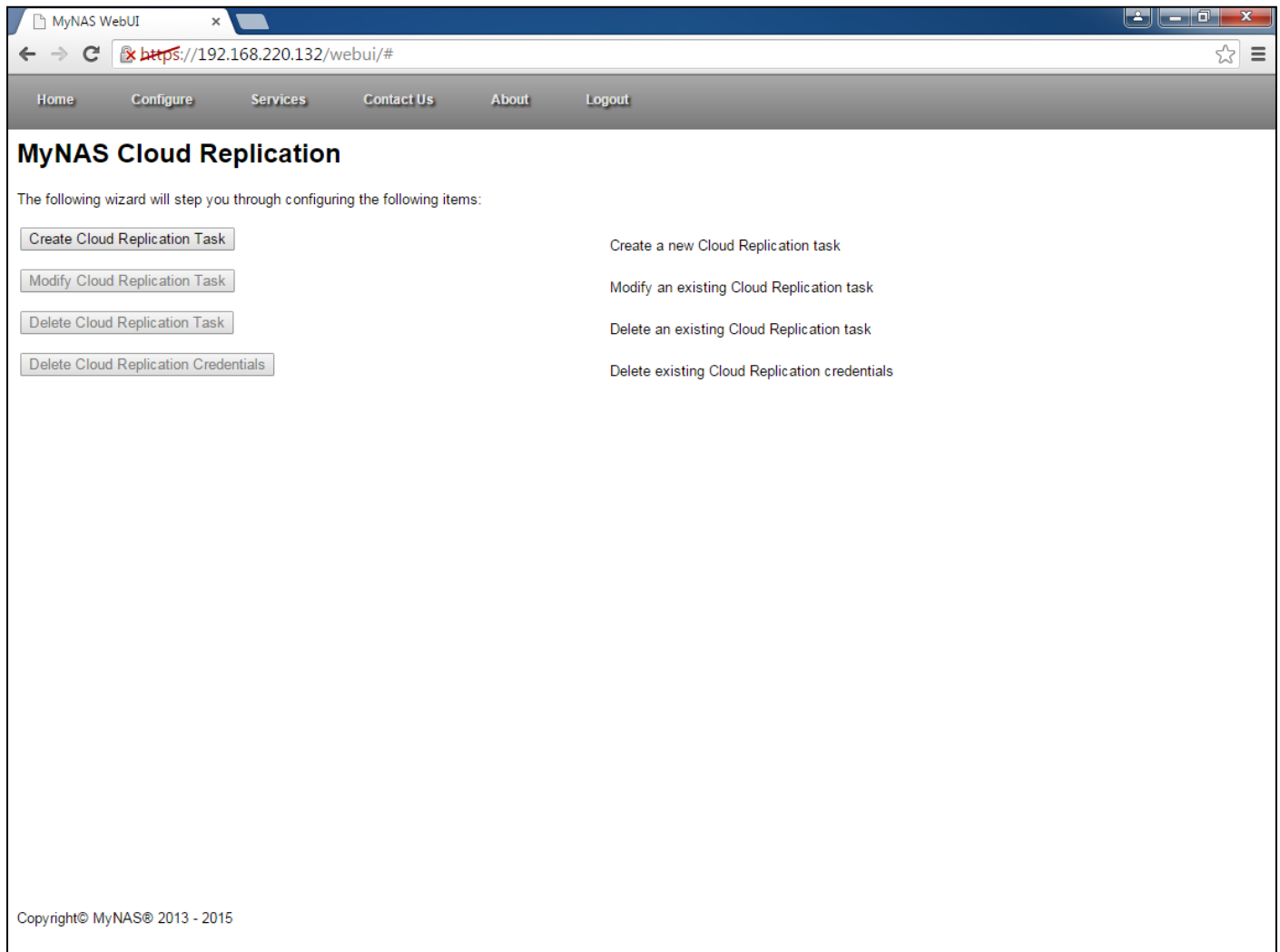
Only replicate data that should be replicated such as important documents, or photos. Data such as video files or very large files should not be replicated to the cloud. Uploading these sort of files not only consumes and uses all your data allowance quickly, however you may also incur a charge from your selected Cloud Replication Partner due to the storage space now consumed.

Create a new Cloud Replication Task

To create a new Cloud Replication Task, on your MyNAS storage appliance, follow the directions below.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Cloud Replication'.

Once selected, the following will be displayed:



Click the "Create Cloud Replication Task" to create a new task.

MyNAS WebUI x

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MyNAS Cloud Replication

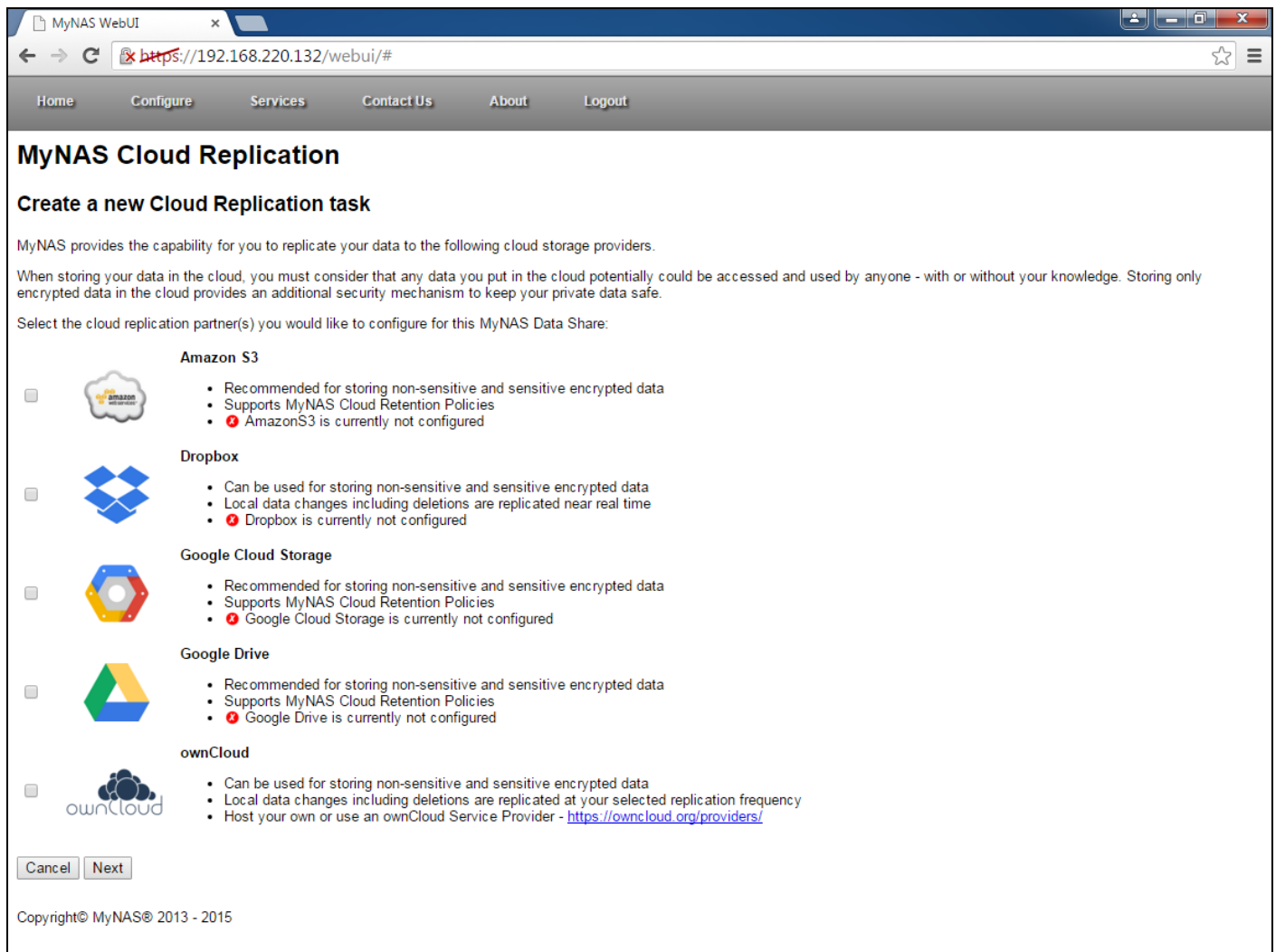
Create a new Cloud Replication task

Select the MyNAS Data Share for Cloud Replication:

- Select Data Share - ▾
- Select Data Share -
- Documents

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Select the MyNAS Data Share which you would like to replicate to the cloud and click Next



Select the Cloud Replication Partners that you would like to use to replicate this Data Share to.

Depending on which partners are selected, configuration options for each selected replication partner will be requested.

Once all the required Cloud Replication Partners are selected, click Next

AmazonS3 Cloud Replication

When selecting AmazonS3, if this has not been configured before, the following will be displayed, detailing specific instructions on what is needed to configure this Cloud Replication Partner access. On the AmazonS3 site, you will need to generate the following:

- AWS Access Key
- AWS Secret Key

MyNAS Cloud Replication

Create a new Cloud Replication task

In order to configure AmazonS3 replication for your MyNAS Storage Appliance, you need to have valid Access Keys for your Amazon AWS account. Access keys are created within the Amazon AWS portal located here: https://console.aws.amazon.com/iam/home?region=us-west-2#security_credentials. Login to the Amazon AWS portal and create new Access Keys for this MyNAS Storage Appliance:

Your Security Credentials

Use this page to manage the credentials for your AWS account. To manage credentials for AWS Identity and Access Management (IAM) users, use the [IAM Console](#). To learn more about the types of AWS credentials and how they're used, see [AWS Security Credentials](#) in [AWS General Reference](#).

Access Keys (Access Key ID and Secret Access Key)

You use access keys to sign programmatic requests to AWS services. To learn how to sign requests using your access keys, see the [signing documentation](#). For your protection, store your access keys securely and do not share them. In addition, AWS recommends that you rotate your access keys every 90 days. Note: You can have a maximum of two access keys (active or inactive) at a time.

Created	Deleted	Access Key ID	Status	Actions
xxxx		xxxx	Active	Make Inactive Delete

[Create New Access Key](#)

Important Change - Managing Your AWS Secret Access Keys

As described in a [previous announcement](#), you cannot retrieve the existing secret access keys for your AWS root account, though you can still create a new root access key at any time. As a [best practice](#), we recommend [creating an IAM user](#) that has access keys rather than relying on root access keys.

Note: Be sure to record the Access Key and Secret Key for your use. The Secret Key will only be displayed once by the Amazon AWS Portal.

[Cancel](#) [Next](#)

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Once you have these credentials, click Next

MyNAS WebUI

← → ↻ <https://192.168.220.132/webui/#> ☆ ☰

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MyNAS Cloud Replication

Create a new Cloud Replication task

Provide the details below to configure this MyNAS Storage Appliance to access your Amazon AWS Account

Note: Select an AWS Default Region to optimise for network latency, minimise costs, or to address any regulatory requirement. If in doubt, select the region closest to your geographic location.

Amazon AWS Access Key

Amazon AWS Secret Key

Amazon AWS S3 Default Region

Amazon AWS Transfer Encryption Key
(Randomly Generated)

Cancel Next

US Standard (East Coast)
IE - Ireland
DE - Frankfurt
US - West Coast (Oregon)
US - West Coast (California)
SG - Singapore
AU - Sydney
JP - Tokyo
BR - Sao Paulo

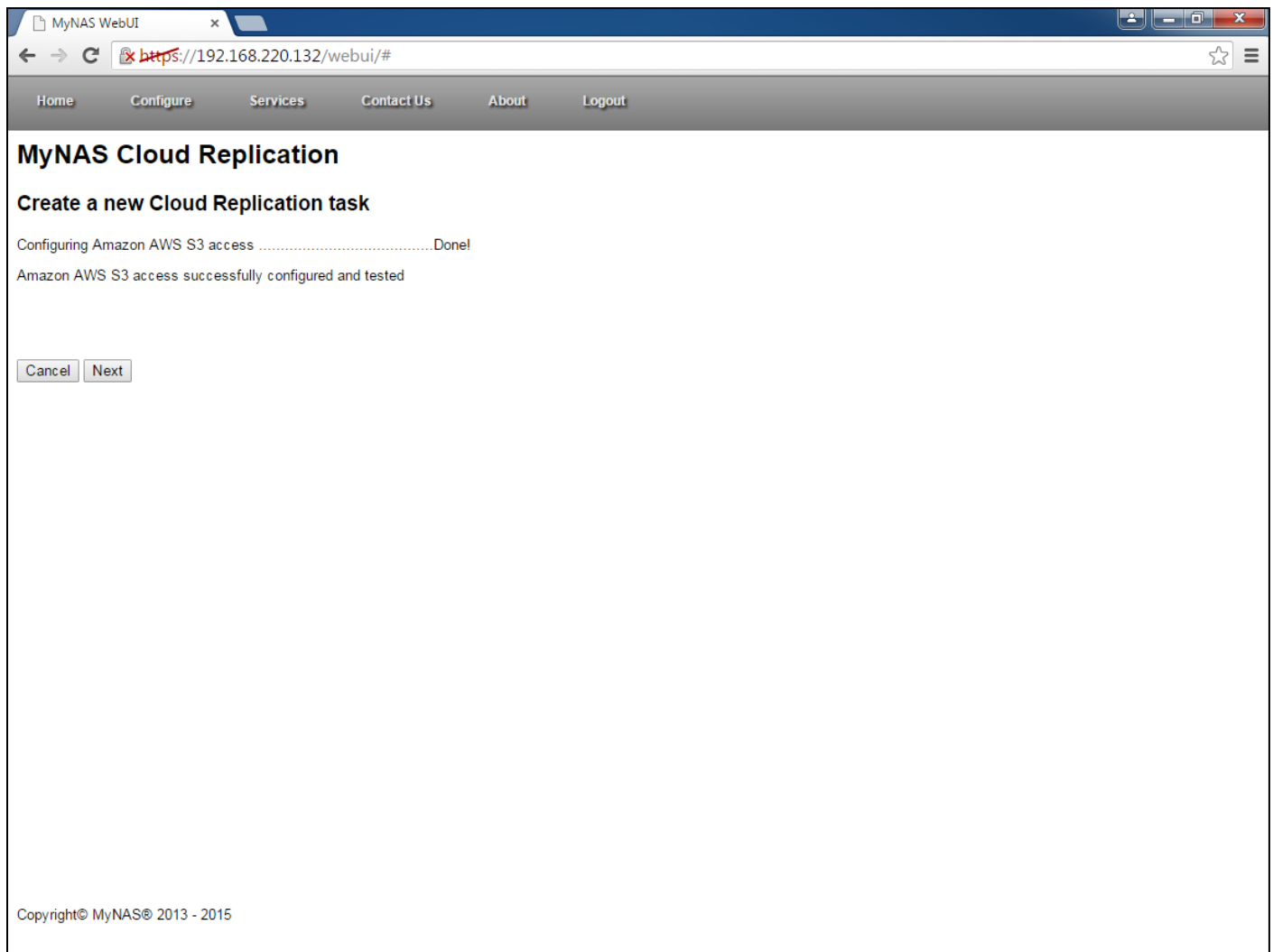
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Enter in your AWS Access and AWS Secret keys, then select an applicable AWS region to store your data in.

It is advisable to store your data in a region as close as possible to where you live, or select a region that you are comfortable with in keeping your data safe.

Further reading: <https://aws.amazon.com/compliance/data-privacy-faq/>

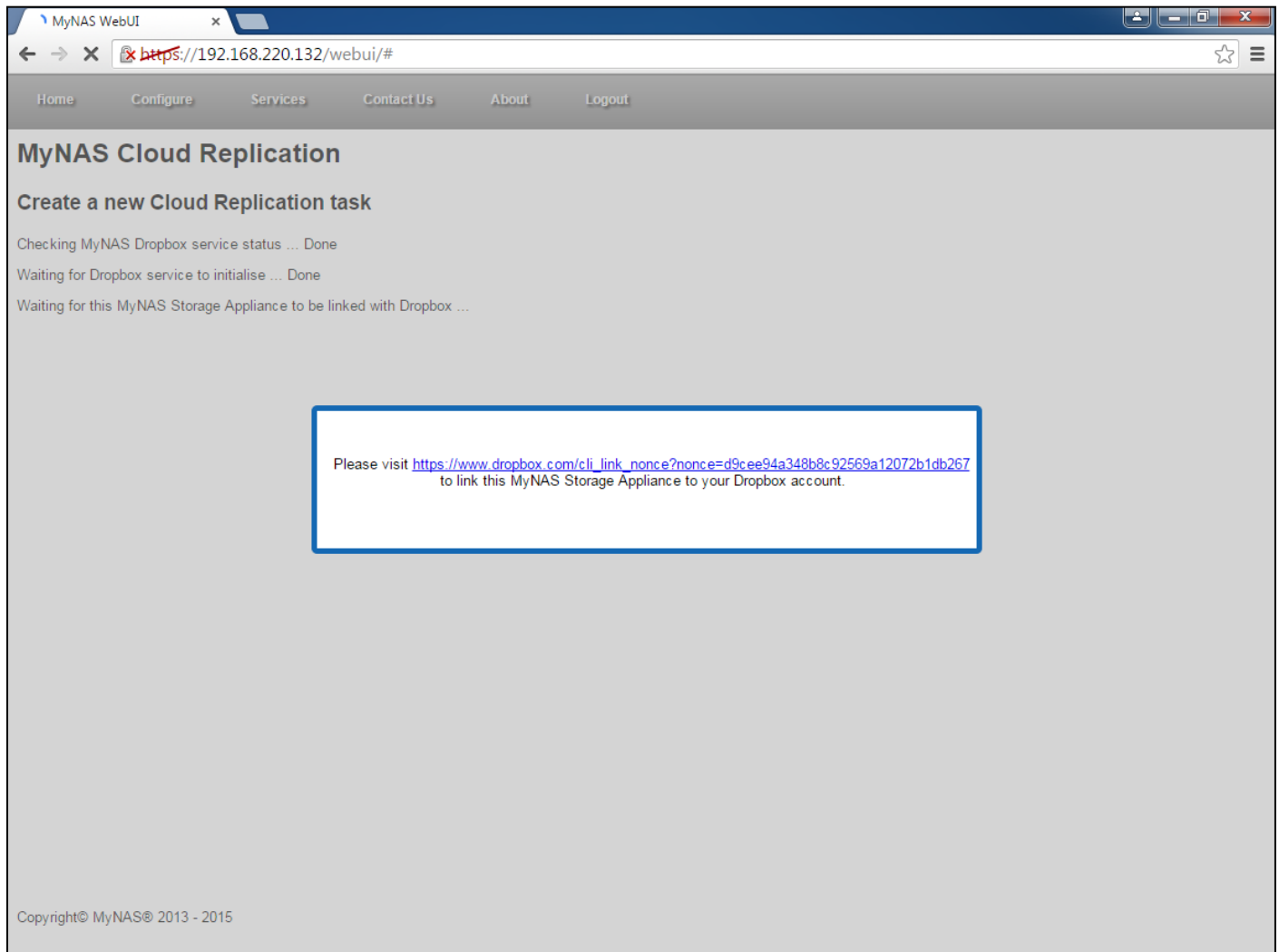
Once a region is selected, click Next



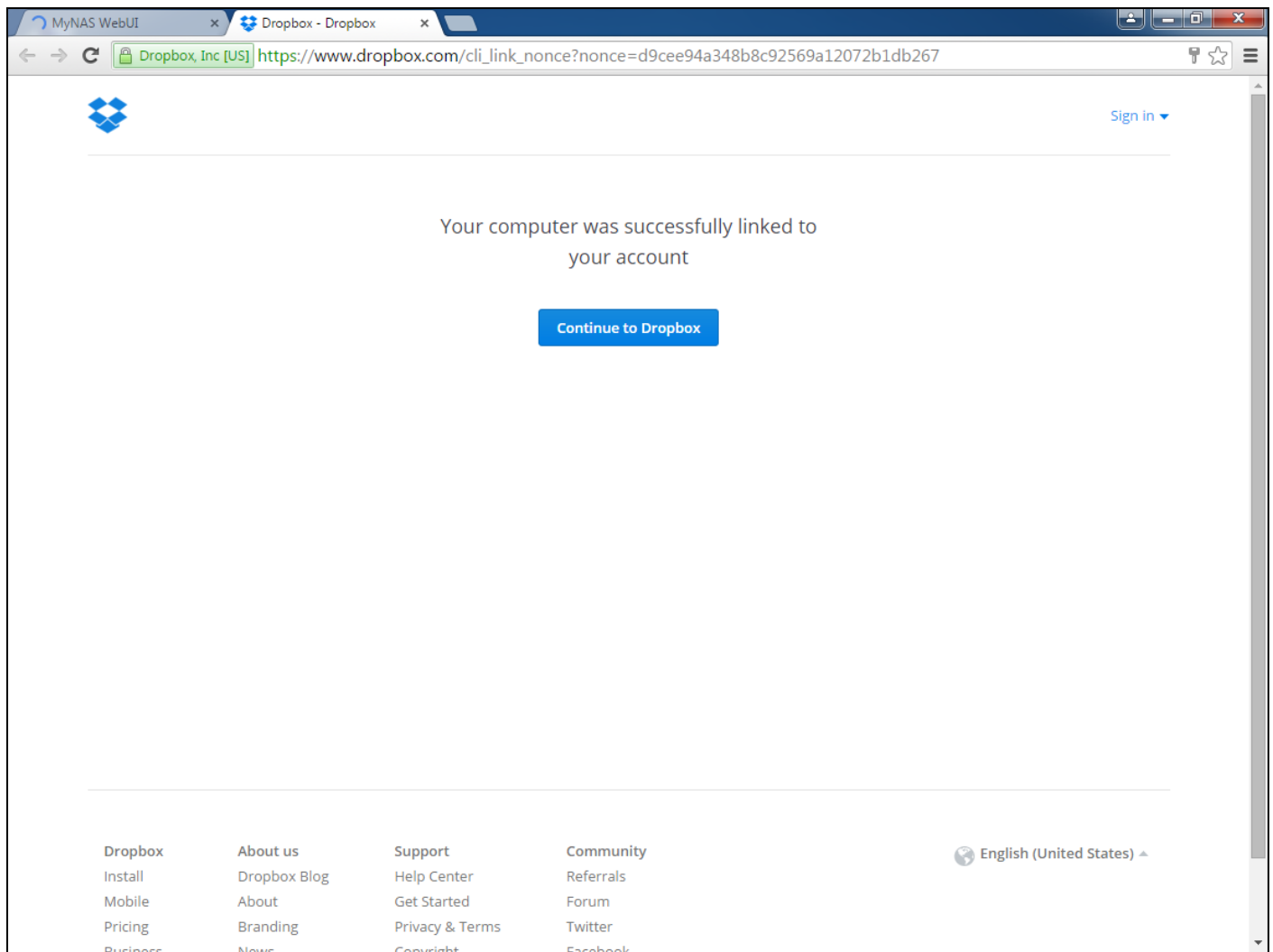
MyNAS will now configure the AmazonS3 client using the access credentials provided. Click Next to continue.

Dropbox

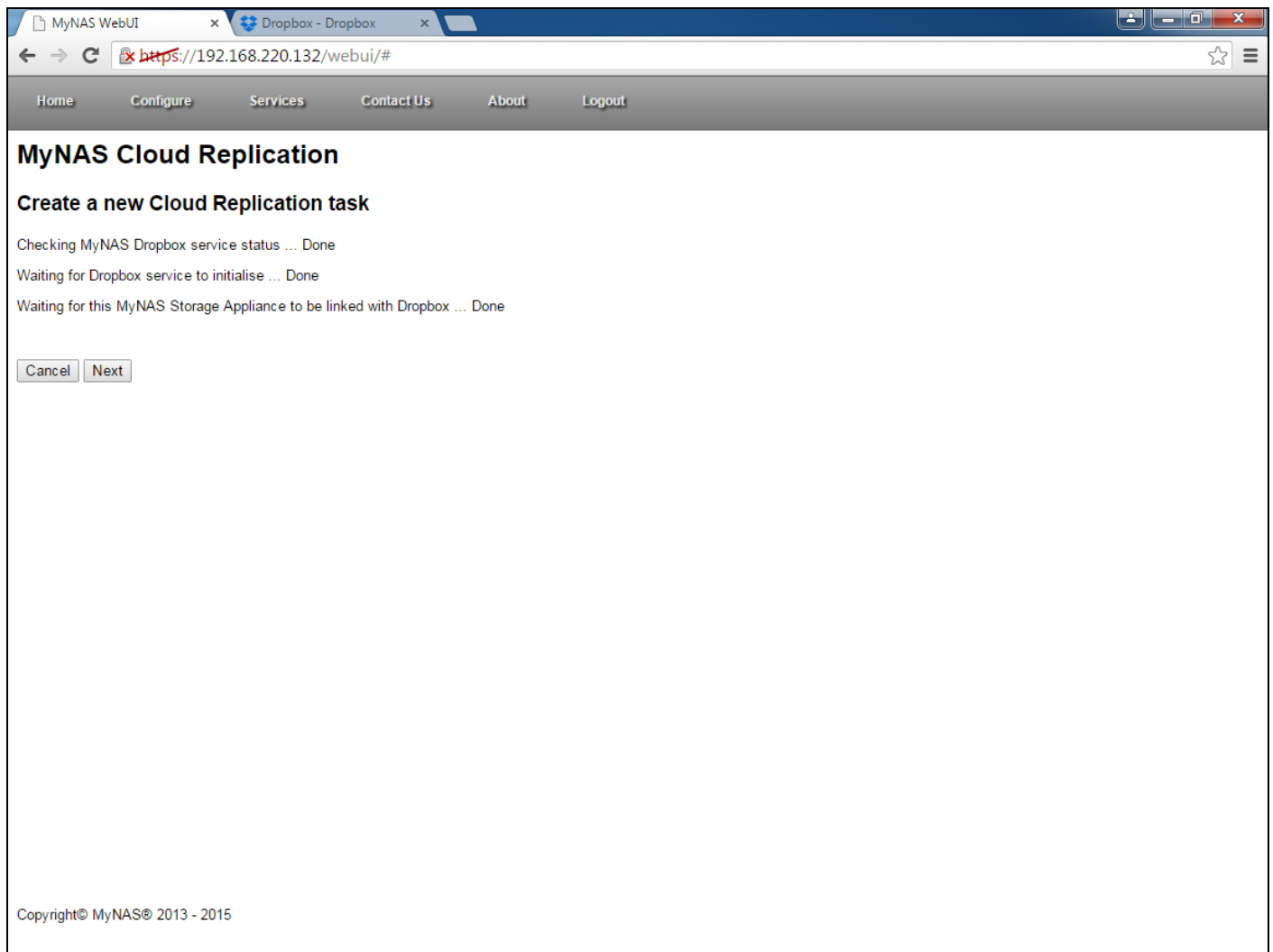
When configuring Dropbox for the first time, MyNAS will display a URL requesting you to link your MyNAS Storage Appliance with your Dropbox account.



Click the URL, sign into Dropbox to link the MyNAS Storage Appliance



Once your MyNAS Storage Appliance is linked, go back to the MyNAS WebUI tab and the Dropbox configuration will complete



Click Next to continue

Google Cloud Storage

When selecting Google Cloud Storage, if this has not been configured before, the following will be displayed, detailing specific instructions on what is needed to configure this Cloud Replication Partner access. On the Google Cloud Platform site, you will need to generate the following:

- Project ID
- Access Key
- Secret

MyNAS WebUI

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MyNAS Cloud Replication

Create a new Cloud Replication task

In order to configure Google Cloud Storage replication for your MyNAS Storage Appliance, you need to perform the following tasks before continuing:

1. Create a new Google Cloud Storage account on the Google Cloud Platform site: <https://cloud.google.com/storage/>
2. Log in to the Google Developers Console: <https://console.developers.google.com> and create a new project by clicking on 'Create Project'. When creating the new project, take note of the 'project id' assigned to the project.

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Once you have obtained these items, click Next

MyNAS WebUI x

← → ↻ ~~https://~~192.168.220.132/webui/# ☆ ≡

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MyNAS Cloud Replication

Create a new Cloud Replication task

Provide the details below to configure this MyNAS Storage Appliance to access your Google Cloud Storage Account

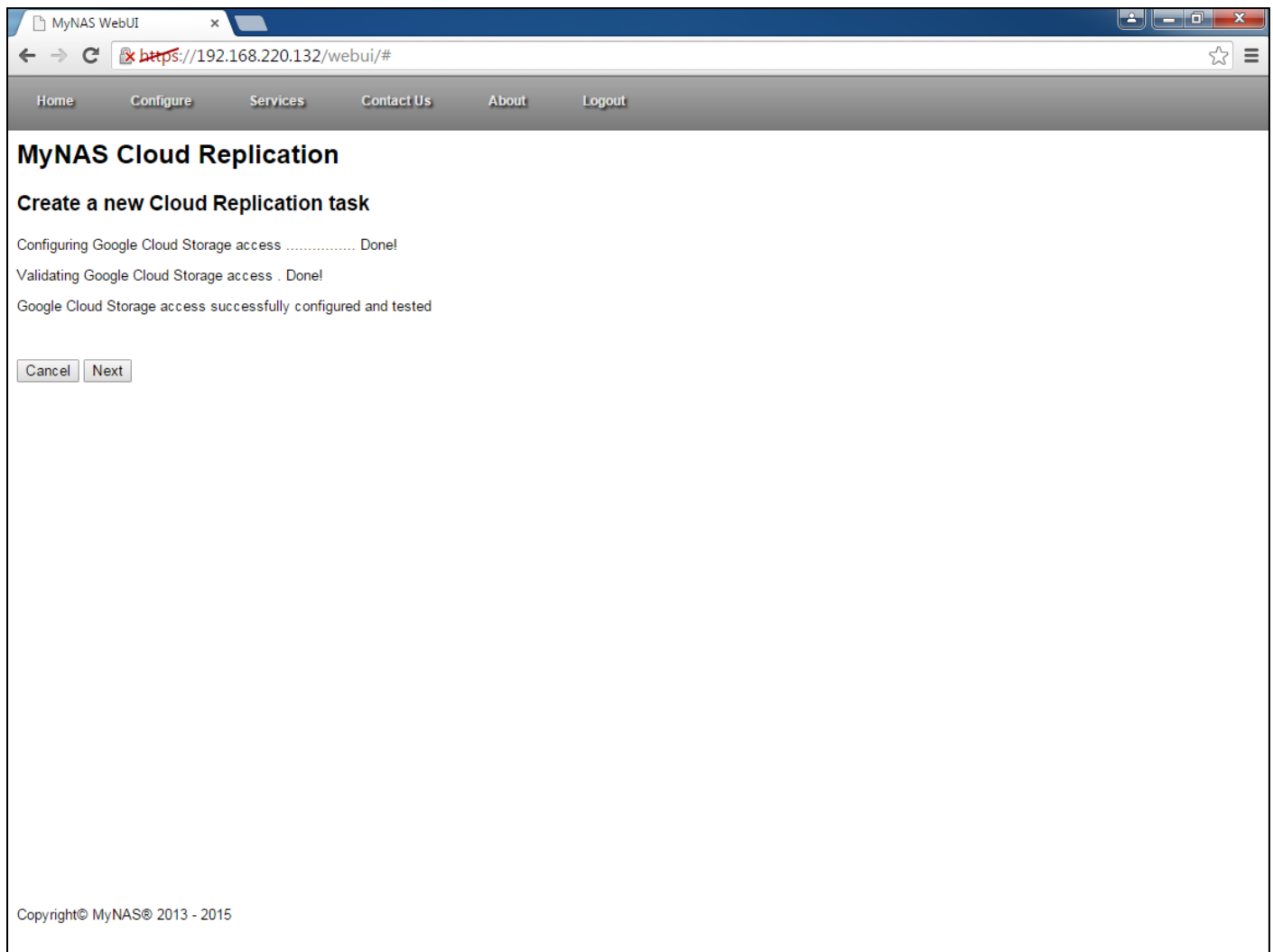
Google Cloud Storage Access Key

Google Cloud Secret Key

Google Cloud Project ID

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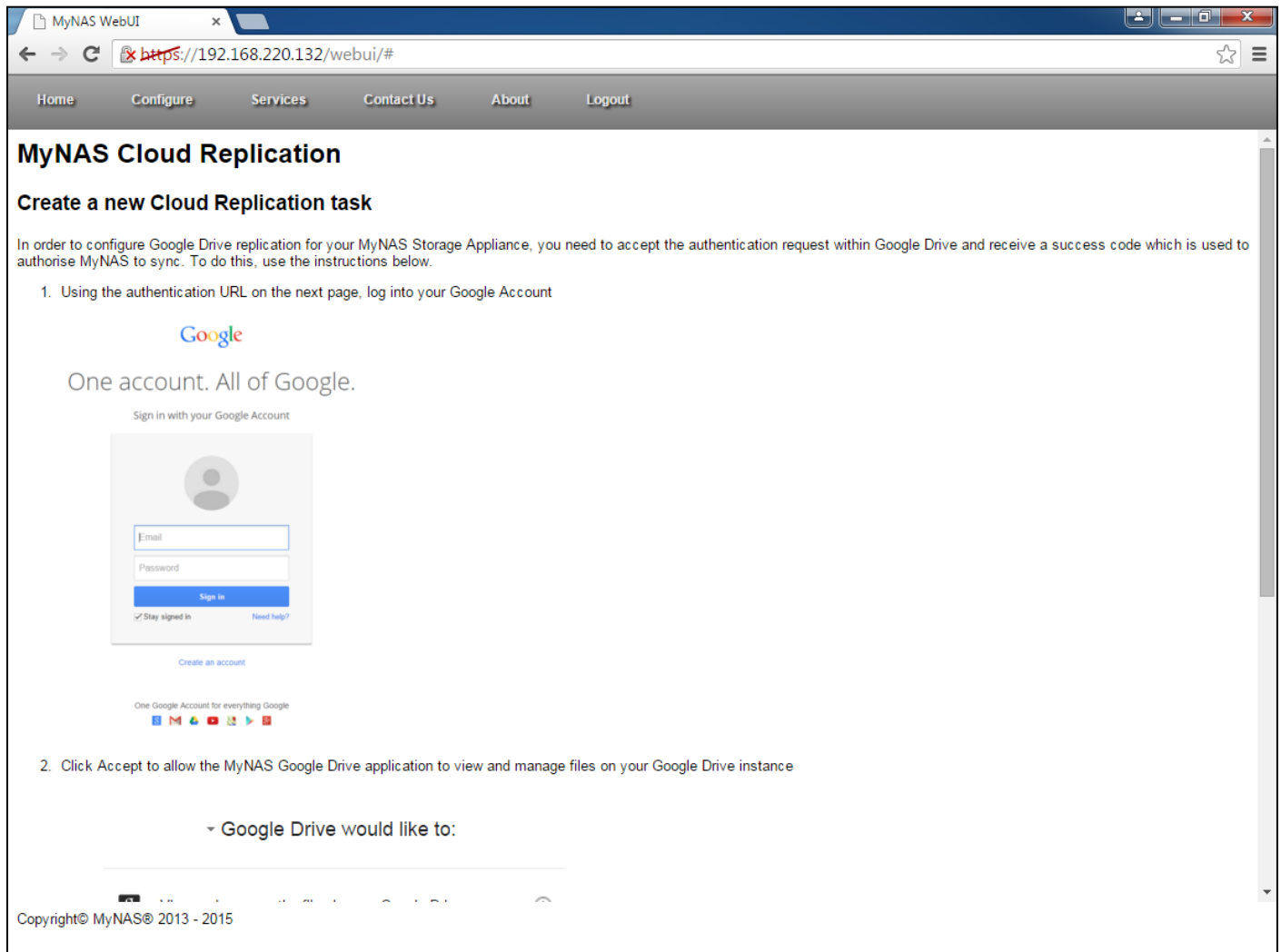
Enter in the required items and click Next



MyNAS will now configure the access to the Google Cloud Storage using the credential information provided. Once configured, click Next

Google Drive

When selecting Google Drive, if this has not been configured before, the following will be displayed, detailing specific instructions on what is needed to configure this Cloud Replication Partner access.



Click Next to begin the setup procedure for Google Drive

MyNAS WebUI

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MyNAS Cloud Replication

Create a new Cloud Replication task

To obtain the Google Drive Authorisation Response, click on the 'Google Drive Authorisation Request' link below, and copy the code into the response text box:

Google Drive Authorisation URL: [Google Drive Authorisation Request](#)

Google Drive Authorisation Response:

Cancel Next

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Follow the directions below:

1. Click on the Google Drive Authorisation Request, which will open a new browser window requesting you to login to your Google account
2. Once you authenticate to your Google account, the following will be displayed:

drive for Google Drive would like to:

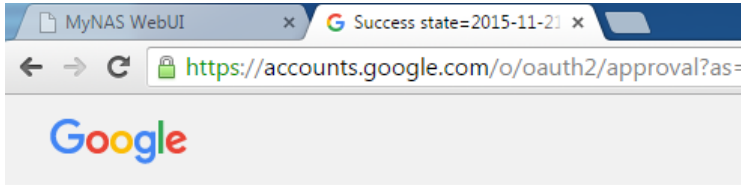
View and manage the files in your Google Drive

By clicking "Allow", you allow this app and Google to use your information in accordance with their respective terms of service and privacy policies. You can change this and other [Account Permissions](#) at any time.

Deny Allow

Click the 'Allow' button

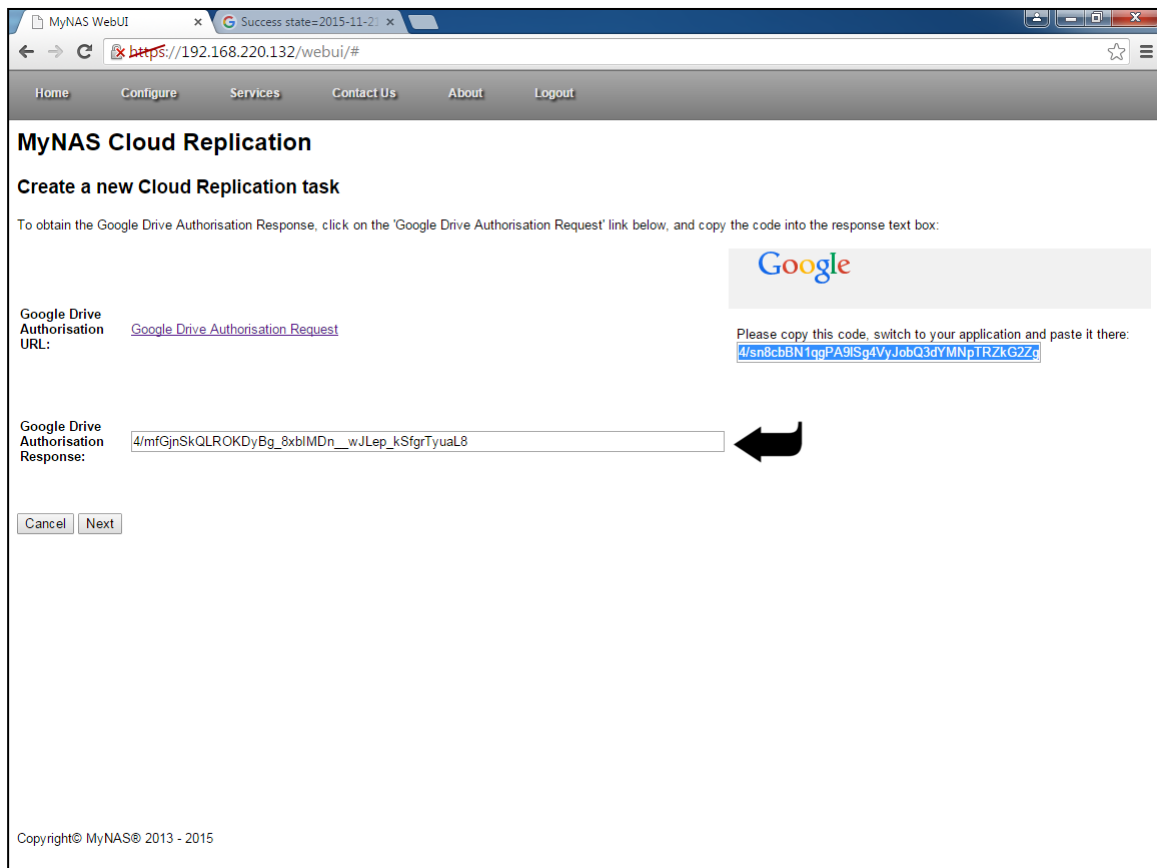
- Copy the presented code so that this can be used in the MyNAS Storage Appliance configuration wizard



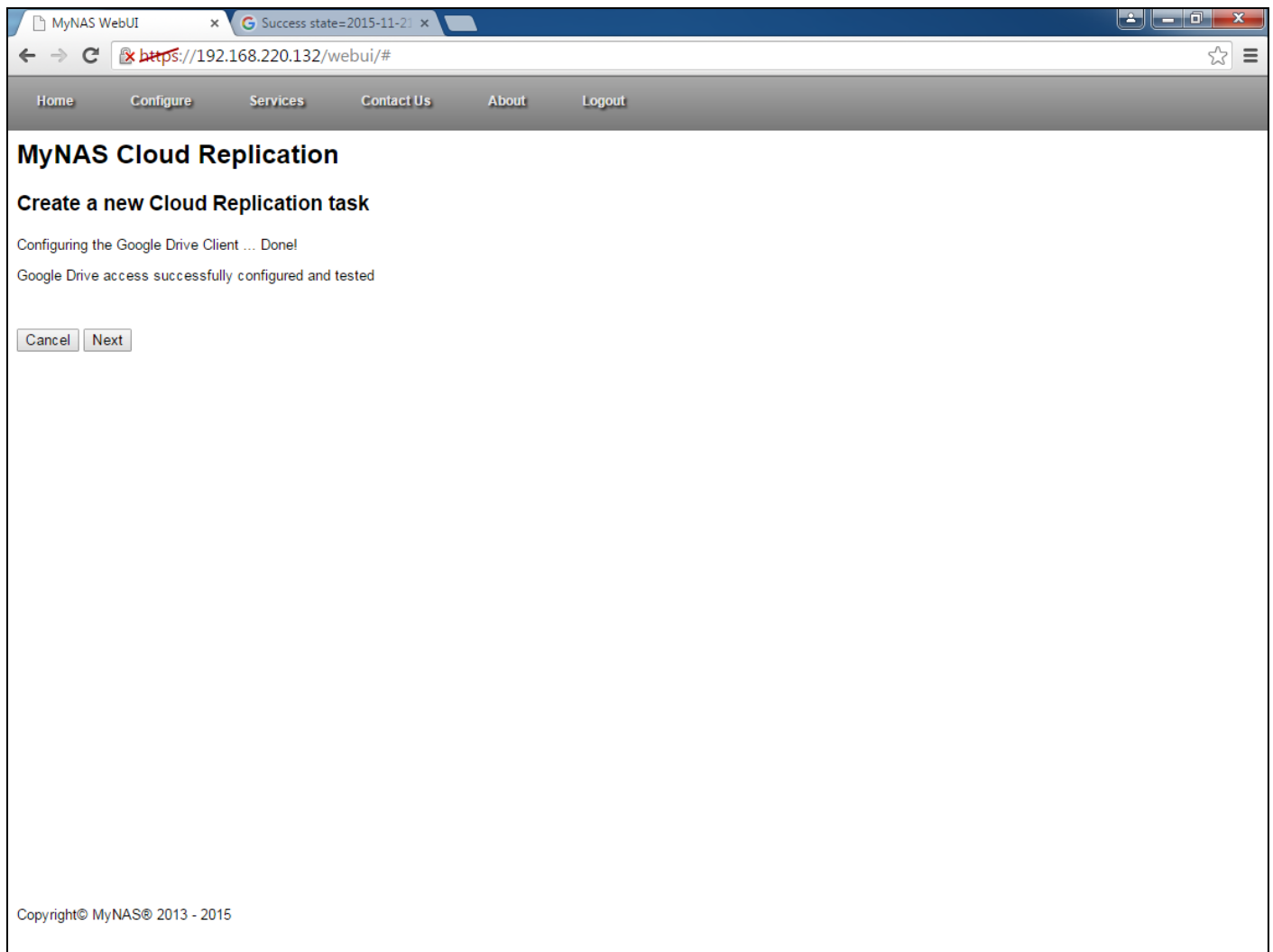
Please copy this code, switch to your application and paste it there:

`4/mfGjnSkQLROKdyBg_8xbIMDn_wJLep_kSfgrT`

- Switch back to the MyNAS Storage Appliance configuration wizard and paste the response code where required



Click Next to continue

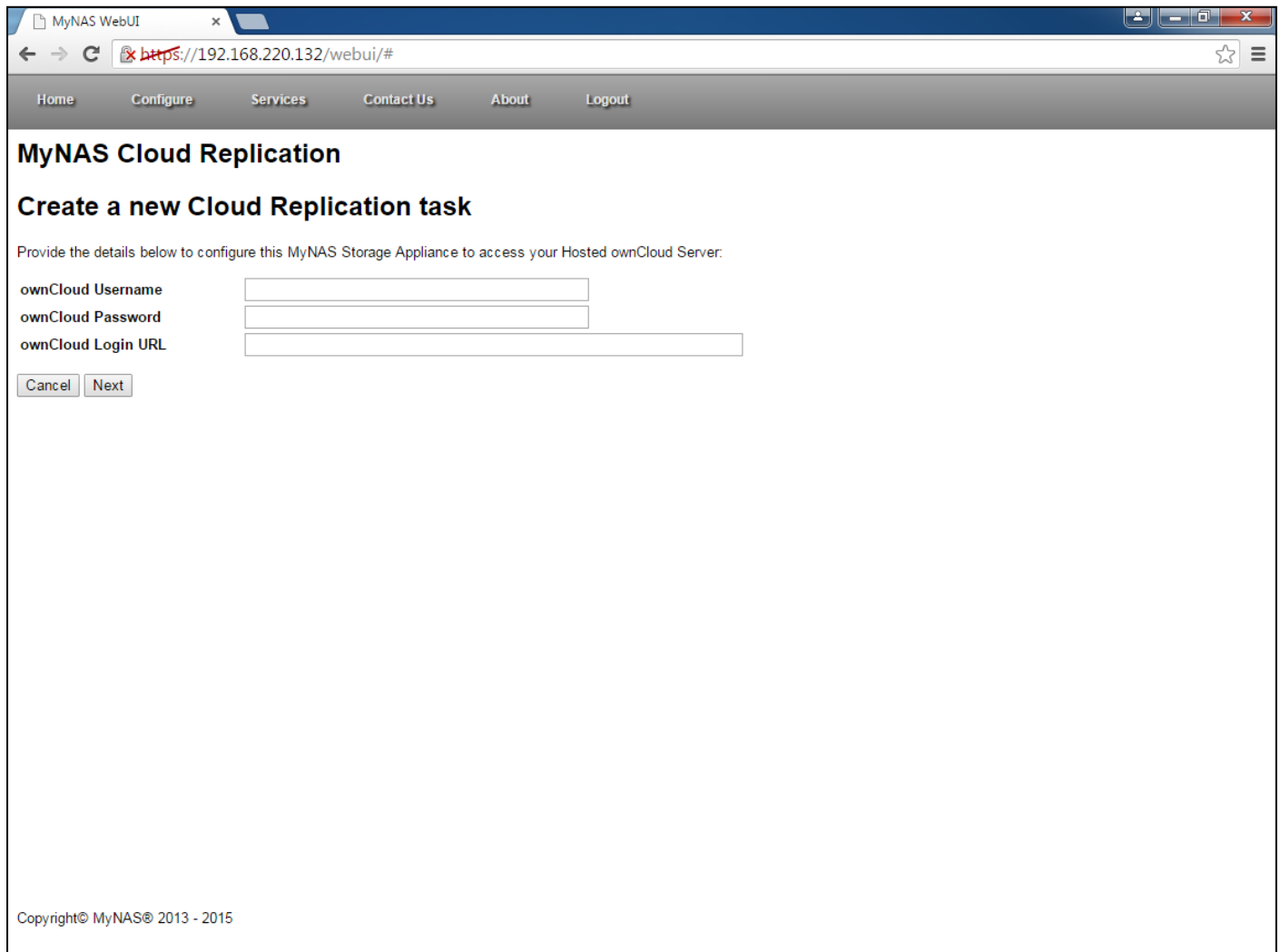


MyNAS Storage Appliance will now configure the Google Drive Client using the response code provided. Click Next to continue

ownCloud Server

When selecting an ownCloud Server for Cloud Replication, the following will be displayed, detailing specific instructions on what is needed to configure this Cloud Replication Partner access. Due to how the ownCloud Server client operates, this configuration option will be presented each time, for each replication task being configured.

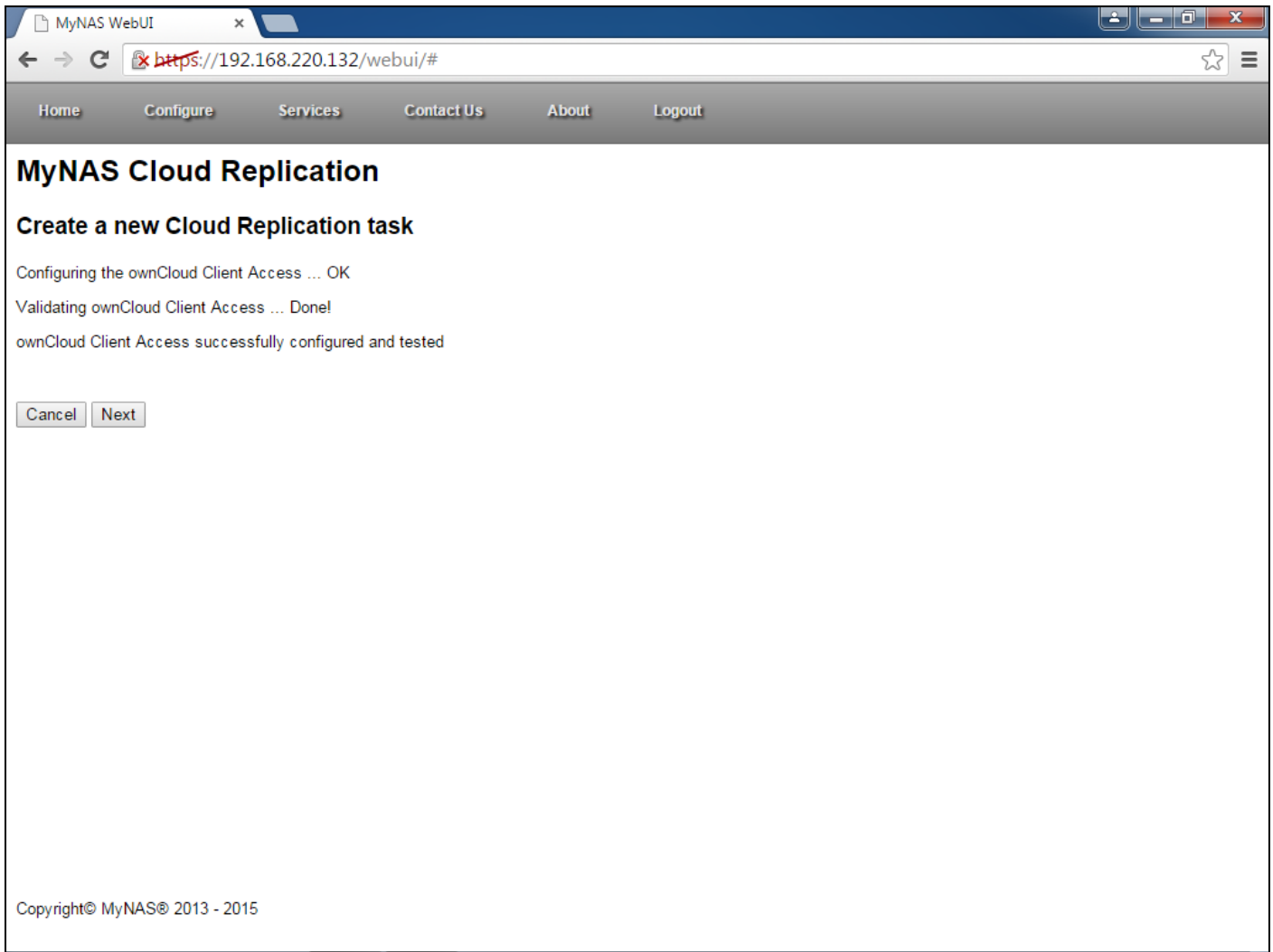
A list of ownCloud Server provides can be found here: <https://owncloud.org/providers/>



The screenshot shows a web browser window titled 'MyNAS WebUI' with the address bar displaying 'https://192.168.220.132/webui/#'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Cloud Replication' and 'Create a new Cloud Replication task'. Below this, a message states: 'Provide the details below to configure this MyNAS Storage Appliance to access your Hosted ownCloud Server:'. The form contains three input fields: 'ownCloud Username', 'ownCloud Password', and 'ownCloud Login URL'. At the bottom of the form are 'Cancel' and 'Next' buttons. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

Using the credentials provided when signing up for the ownCloud service, enter in your ownCloud username and password together with the ownCloud URL to access the service.

Once all the required details are entered, click Next

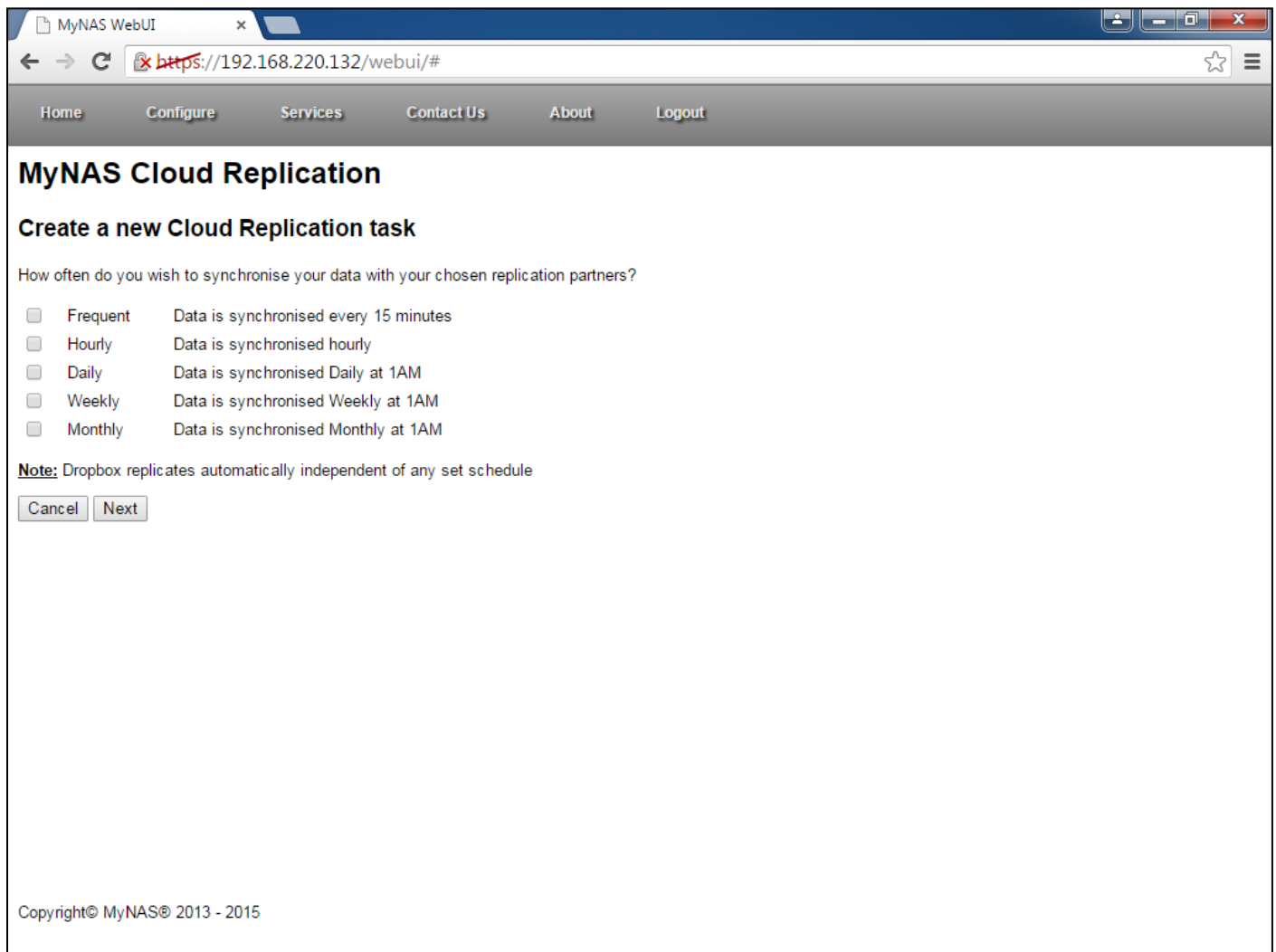


MyNAS will now validate the access to the ownCloud provider and test connectivity. Click Next to continue.

Cloud Replication Frequency

Select the Cloud Replication frequency for this replication task.

Note: As Dropbox synchronises automatically, it is independent of any replication frequency that you select.



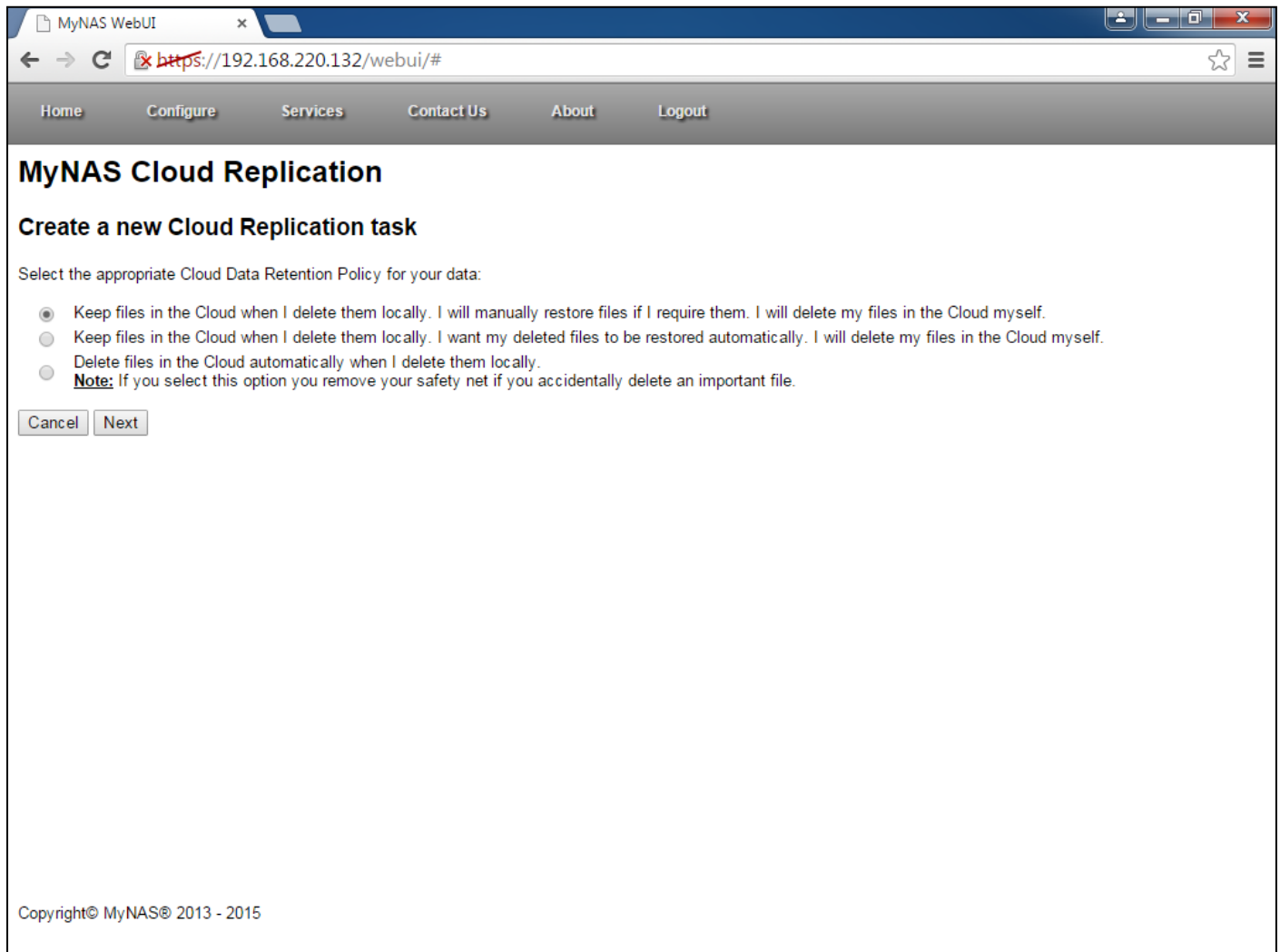
The screenshot shows a web browser window titled "MyNAS WebUI" with the address bar displaying "https://192.168.220.132/webui/#". The navigation menu includes "Home", "Configure", "Services", "Contact Us", "About", and "Logout". The main heading is "MyNAS Cloud Replication". Below it, the section is titled "Create a new Cloud Replication task". A question asks, "How often do you wish to synchronise your data with your chosen replication partners?". There are five radio button options: "Frequent" (Data is synchronised every 15 minutes), "Hourly" (Data is synchronised hourly), "Daily" (Data is synchronised Daily at 1AM), "Weekly" (Data is synchronised Weekly at 1AM), and "Monthly" (Data is synchronised Monthly at 1AM). A note states, "Note: Dropbox replicates automatically independent of any set schedule". At the bottom of the form are "Cancel" and "Next" buttons. The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Once the desired replication frequency is selected, click Next.

Cloud Retention Policy

When selecting AmazonS3, Google Cloud Storage and Google Drive, MyNAS Storage Appliance has the capability to utilise Cloud Retention Policies.

These policies allow you to have these Cloud Replication Targets provide the capability to restore your data if you accidentally delete an important file.



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/#'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Cloud Replication' and contains the heading 'Create a new Cloud Replication task'. Below this, it says 'Select the appropriate Cloud Data Retention Policy for your data:'. There are three radio button options:

- ☒ Keep files in the Cloud when I delete them locally. I will manually restore files if I require them. I will delete my files in the Cloud myself.
- ☐ Keep files in the Cloud when I delete them locally. I want my deleted files to be restored automatically. I will delete my files in the Cloud myself.
- ☐ Delete files in the Cloud automatically when I delete them locally.

A note follows: **Note:** If you select this option you remove your safety net if you accidentally delete an important file.

At the bottom of the form are two buttons: 'Cancel' and 'Next'.

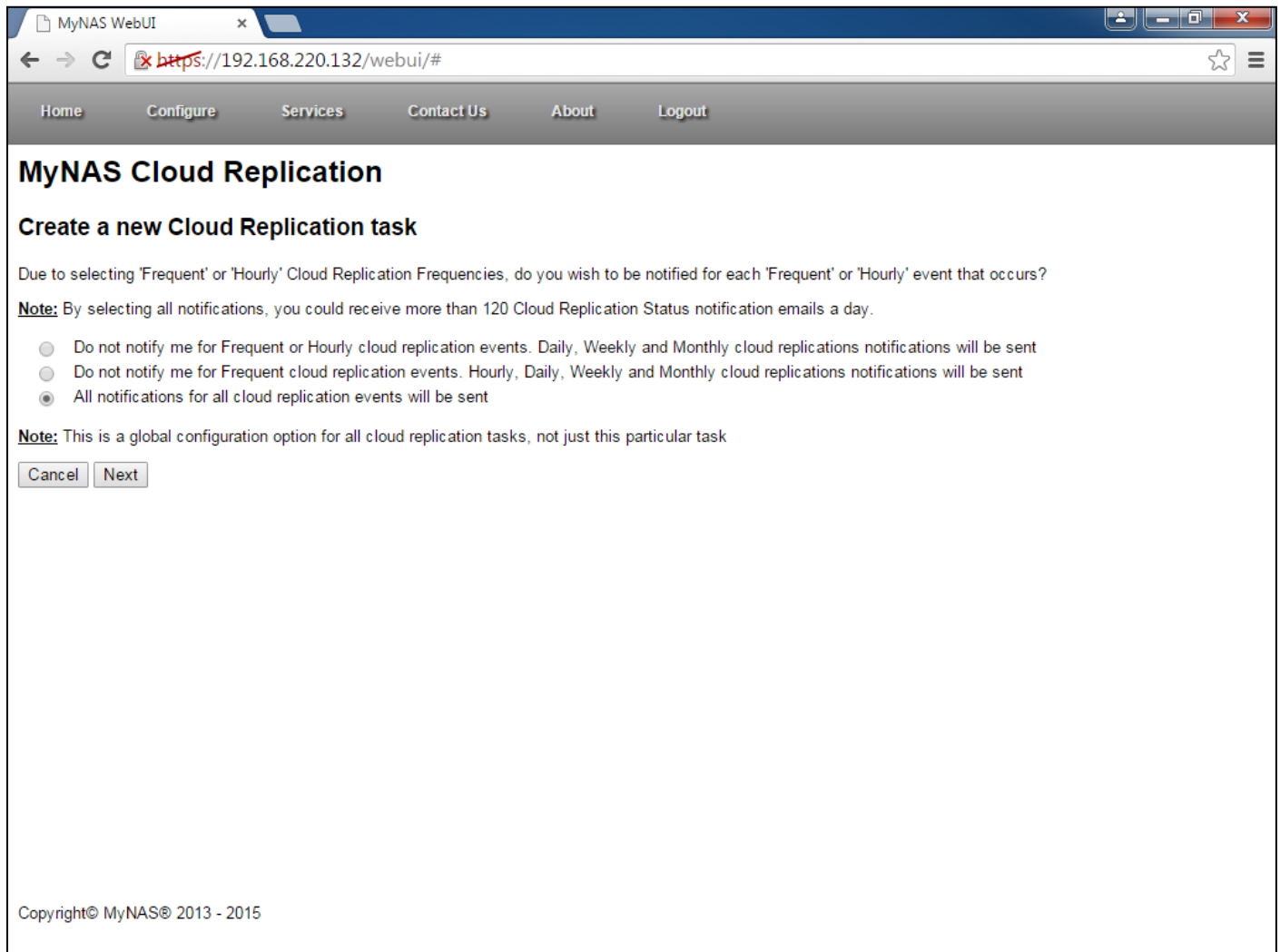
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Once a retention policy has been selected, click Next

Cloud Replication Notifications

When a replication task occurs, you will be notified of the actions taken on your data, together with any failures or errors.

Depending on the frequency selected, this could generate a significant number of messages per day. Select the appropriate notification frequency for you for all Cloud Replication Tasks



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/#'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Cloud Replication' and contains the following text:

Create a new Cloud Replication task

Due to selecting 'Frequent' or 'Hourly' Cloud Replication Frequencies, do you wish to be notified for each 'Frequent' or 'Hourly' event that occurs?

Note: By selecting all notifications, you could receive more than 120 Cloud Replication Status notification emails a day.

- ☐ Do not notify me for Frequent or Hourly cloud replication events. Daily, Weekly and Monthly cloud replications notifications will be sent
- ☐ Do not notify me for Frequent cloud replication events. Hourly, Daily, Weekly and Monthly cloud replications notifications will be sent
- ☒ All notifications for all cloud replication events will be sent

Note: This is a global configuration option for all cloud replication tasks, not just this particular task

Cancel Next

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Once the notification policy has been set, click Next.

Confirmation of settings and Completion of task

Confirm all the requested options selected for this Cloud Replication Task

MyNAS WebUI

← → ↻ <https://192.168.220.132/webui/#> ☆ ≡

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MyNAS Cloud Replication

Create a new Cloud Replication task

The following settings have been requested for the replication of this data share. Please confirm the requested items below:

Data Share to Replicate:	Documents <ul style="list-style-type: none">• Amazon S3• Dropbox• Google Cloud• Google Drive• ownCloud
Cloud Replication Partners:	<ul style="list-style-type: none">• Frequent• Hourly• Daily• Weekly• Monthly
Cloud Replication Frequency:	
Cloud Retention Policy:	Note: Dropbox replicates automatically independent of any set schedule Keep files in the Cloud when I delete them locally. I will manually restore files if I require them. I will delete my files in the Cloud myself.
Cloud Notification Policy:	All cloud replication notifications will be sent.

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If all the settings are correct, click 'Confirm Settings' to save the settings

MyNAS WebUI x

← → ↻ <https://192.168.220.132/webui/#> ☆ ☰

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MyNAS Cloud Replication

Create a new Cloud Replication task

Successfully created a new Cloud Replication profile with the following settings:

Data Share to Replicate:	Documents <ul style="list-style-type: none">• Amazon 3S• Dropbox• Google Cloud• Google Drive• ownCloud
Cloud Replication Partners:	<ul style="list-style-type: none">• Frequent• Hourly• Daily• Weekly• Monthly
Cloud Replication Frequency:	
Cloud Retention Policy:	Note: Dropbox replicates automatically independent of any set schedule Keep files in the Cloud when I delete them locally. I will manually restore files if I require them. I will delete my files in the Cloud myself.
Cloud Notification Policy:	All cloud replication notifications will be sent.

Note: As Amazon S3 or Google Cloud was selected, the UUID of your system (564DDC64-74A4-4FAC-C4E2-A47E11FC56F6) will be used as the data bucket name storing your replicated data.

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The Cloud Replication settings are now saved. Based on the replication frequency selected, the replication will begin at the next replication window. Click 'Finish' to close the wizard.

Note: Depending on the size of data in the Data Share, the initial synchronisation to your selected replication partners may take some time to complete.

On the MyNAS Storage Appliance Home Page, a snapshot of what is now configured is available

The screenshot displays the MyNAS WebUI interface. The browser address bar shows the URL <https://192.168.220.132/webui/#>. The navigation menu includes Home, Configure, Services, Contact Us, About, and Logout.

MyNAS Data Share Information

Share Name	Comment	Windows	Mac	Linux	FTP	Low	dlna	WebDAV	Cloud	Size
BitTorrent	BitTorrent Client Data	✓	✗	✗	✗	Low	✓	✗	✗	73.4M
Documents		✓	✗	✗	✗	Low	✗	✗	✓	7.45M

MyNAS Data Share Cloud Replication

Share Name	Replication Frequency	OneDrive	Dropbox	Box	Google Drive	ownCloud
Documents	Frequent, Hourly, Daily, Weekly, Monthly	✓	✓	✓	✓	✓

Storage Device Health

Device Name	Status	Disk Age
/dev/sda	SMART Health Status: OK	N/A
/dev/sdb	SMART Health Status: OK	N/A
/dev/sdc	SMART Health Status: OK	N/A
/dev/sdd	SMART Health Status: OK	N/A
/dev/sde	SMART Health Status: OK	N/A
/dev/sdf	SMART Health Status: OK	N/A
/dev/sdg	SMART Health Status: OK	N/A
/dev/sdh	SMART Health Status: OK	N/A
/dev/sdi	SMART Health Status: OK	N/A
/dev/sdj	SMART Health Status: OK	N/A
/dev/sdk	SMART Health Status: OK	N/A
/dev/sdl	SMART Health Status: OK	N/A

Storage Utilisation

ZFS Pool: storage0

0%

Storage Space Used: 0.01 GB
Total Space Available: 4.81 GB

ZFS Pool: storage1

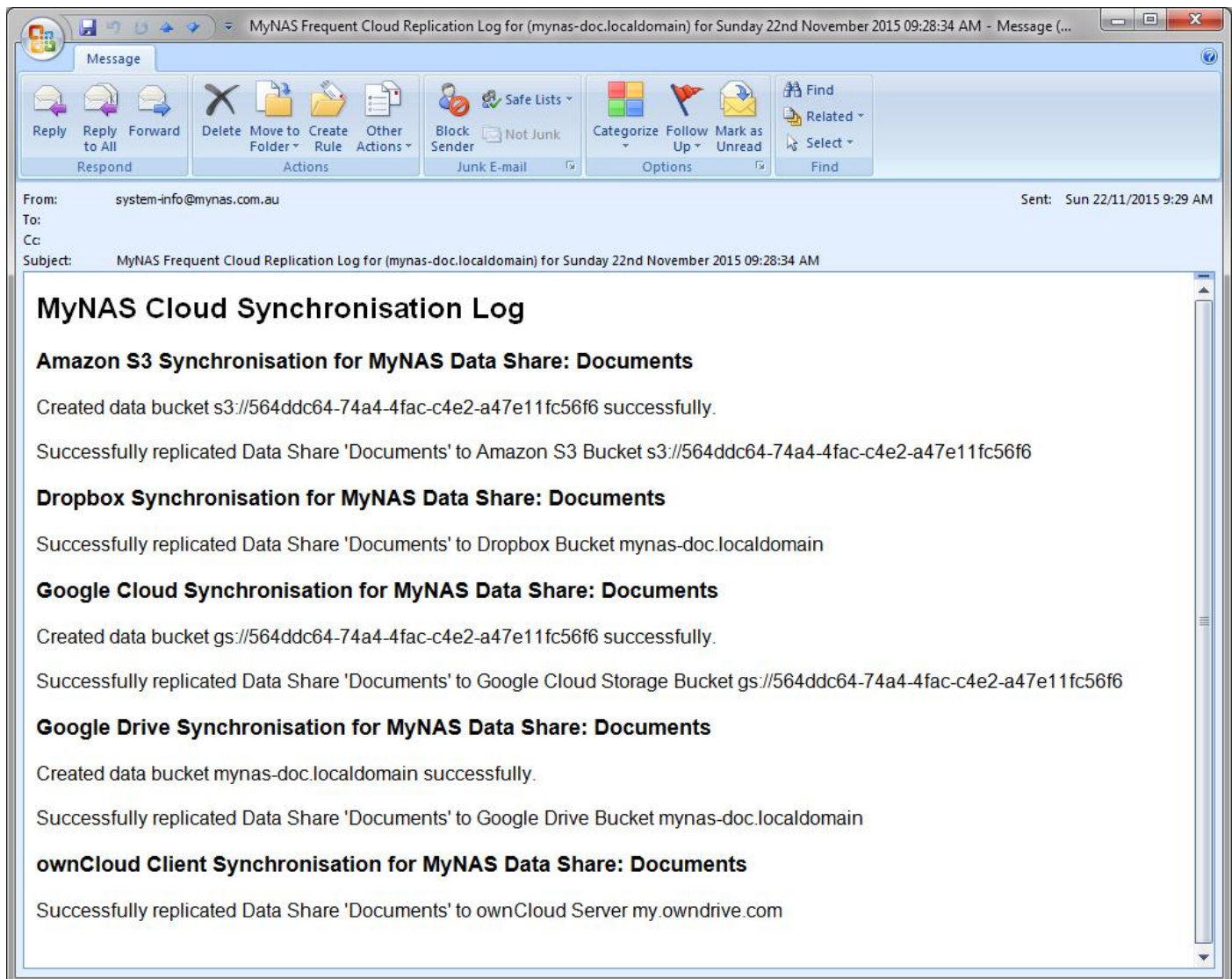
2%

Storage Space Used: 0.07 GB
Total Space Available: 4.81 GB

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Notification of Completed Cloud Replication

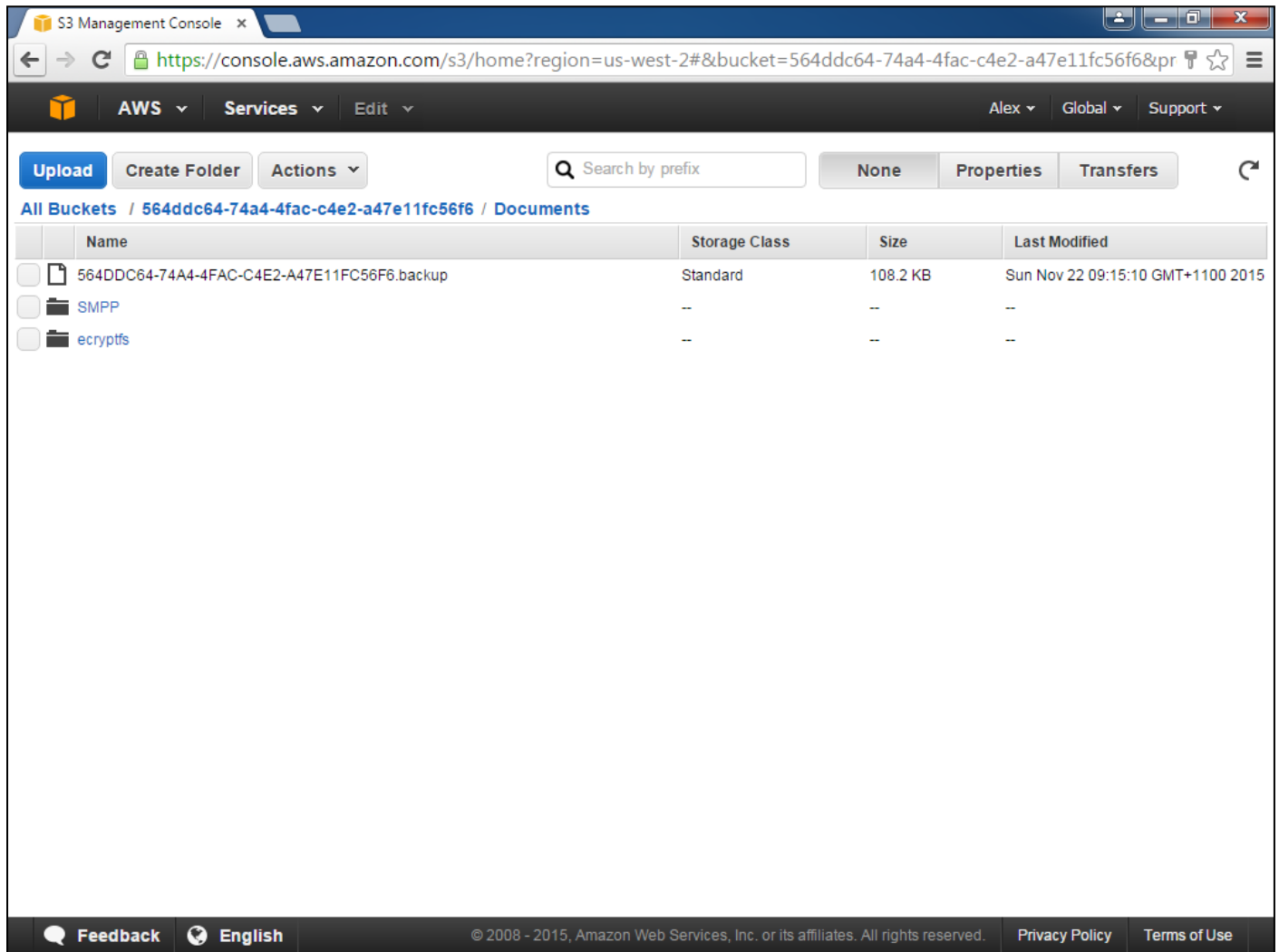
When the initial Cloud Replication task is complete, and depending on the notification frequency selected, the following email will be sent:



Validating Cloud Replication

To further validate your cloud replication and what data has been replicated, login to each of the Cloud Replication Partners to view your data:

Amazon S3



The screenshot displays the Amazon S3 Management Console interface. The browser address bar shows the URL: <https://console.aws.amazon.com/s3/home?region=us-west-2#&bucket=564ddc64-74a4-4fac-c4e2-a47e11fc56f6&pr>. The console header includes the AWS logo, navigation tabs (AWS, Services, Edit), and user information (Alex, Global, Support). The main content area shows the bucket '564ddc64-74a4-4fac-c4e2-a47e11fc56f6' and the folder 'Documents'. A table lists the contents of the folder:

	Name	Storage Class	Size	Last Modified
<input type="checkbox"/>	564DDC64-74A4-4FAC-C4E2-A47E11FC56F6.backup	Standard	108.2 KB	Sun Nov 22 09:15:10 GMT+1100 2015
<input type="checkbox"/>	SMPP	--	--	--
<input type="checkbox"/>	ecryptfs	--	--	--

The footer of the console includes a Feedback button, a language selector (English), copyright information (© 2008 - 2015, Amazon Web Services, Inc. or its affiliates. All rights reserved.), and links to Privacy Policy and Terms of Use.

Dropbox

The screenshot shows the Dropbox web interface for a user named Alex Braunneg. The browser address bar displays the URL: <https://www.dropbox.com/home/mynas-doc.localdomain/Documents>. The interface includes a sidebar with navigation options: Recents, Files, Team, Paper, Photos, Sharing, Links, Events, File requests, Get Started (with a red badge showing '2'), and Deleted files. The main area displays a table of files and folders in the 'Documents' folder.

Name	Modified	Shared with
ecryptfs	--	--
SMPP	--	--
564DDC64-74A4-4FAC-C4E2-A47E11FC56F6.backup	17/11/2015 2:57 PM	--
.csync_journal.db	15 mins ago	--

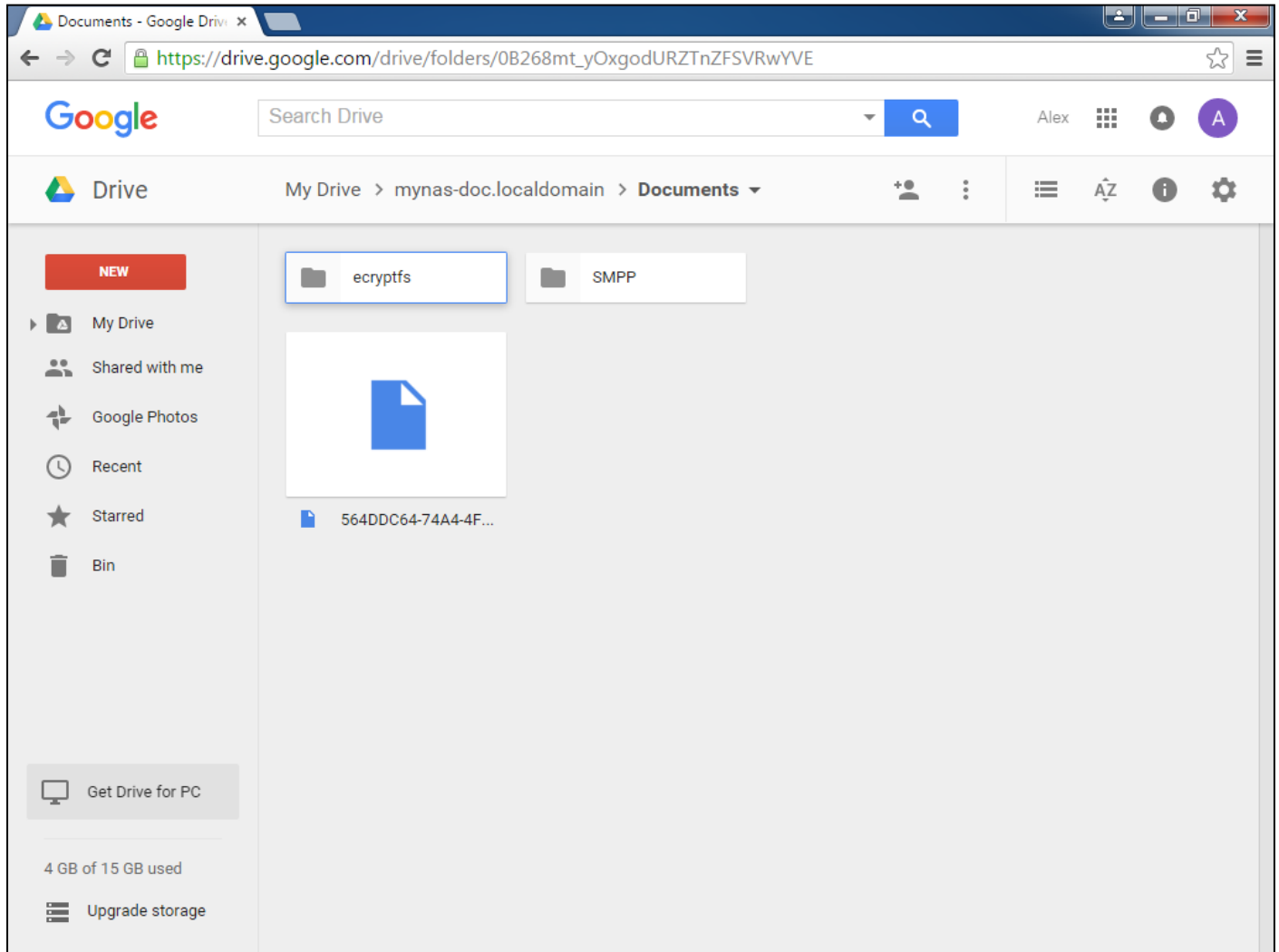
A promotional banner for Dropbox is visible at the bottom left, stating: "Fast sync. Fast setup. Get **Dropbox**. Help Privacy [Test it free](#)".

Google Cloud Storage

The screenshot displays the Google Developers Console interface for Google Cloud Storage. The browser address bar shows the URL: `https://console.developers.google.com/storage/browser/564ddc64-74a4-4fac-c4e2-a47e11fc56f6/Documents/?project=`. The console header includes the 'Google Developers Console' title, a search bar, and a 'My Project' dropdown. The left sidebar contains navigation options: 'Storage', 'Browser' (selected), 'Transfer', and 'Settings'. The main content area is titled 'Browser' and shows the path 'Buckets / 564ddc64-74a4-4fac-c4e2-a47e11fc56f6 / Documents'. Above the file list are buttons for 'UPLOAD FILES', 'UPLOAD FOLDER', and 'CREATE FOLDER', along with a refresh and delete icon. A search bar with the placeholder 'Filter by prefix...' is also present. The file list table has columns for 'Name', 'Size', 'Type', 'Last Uploaded', and 'Shared Publicly'. It contains three entries: a file named '564DDC64-74A4-4FAC-C4E2-A47E11FC56...' (108.27 KB, application/octet-stream, 36 minutes ago), and two folders named 'ecryptfs/' and 'SMPP/'.

Name	Size	Type	Last Uploaded	Shared Publicly
564DDC64-74A4-4FAC-C4E2-A47E11FC56...	108.27 KB	application/octet-stream	36 minutes ago	<input type="checkbox"/>
ecryptfs/	—	Folder	—	
SMPP/	—	Folder	—	

Google Drive



ownCloud Server - via my provider ownDrive.com

The screenshot shows the ownCloud web interface in a browser window. The address bar displays the URL: `https://my.owndrive.com/index.php/apps/files/?dir=%2Fmynas-doc.localdomain%2FDocuments`. The interface includes a sidebar on the left with navigation options: All files, Favorites, Shared with you, Shared with others, Shared by link, External storage, Deleted files, and Settings. The main content area shows the 'Documents' directory for the user 'mynas-doc.localdomain'. It contains a table with the following data:

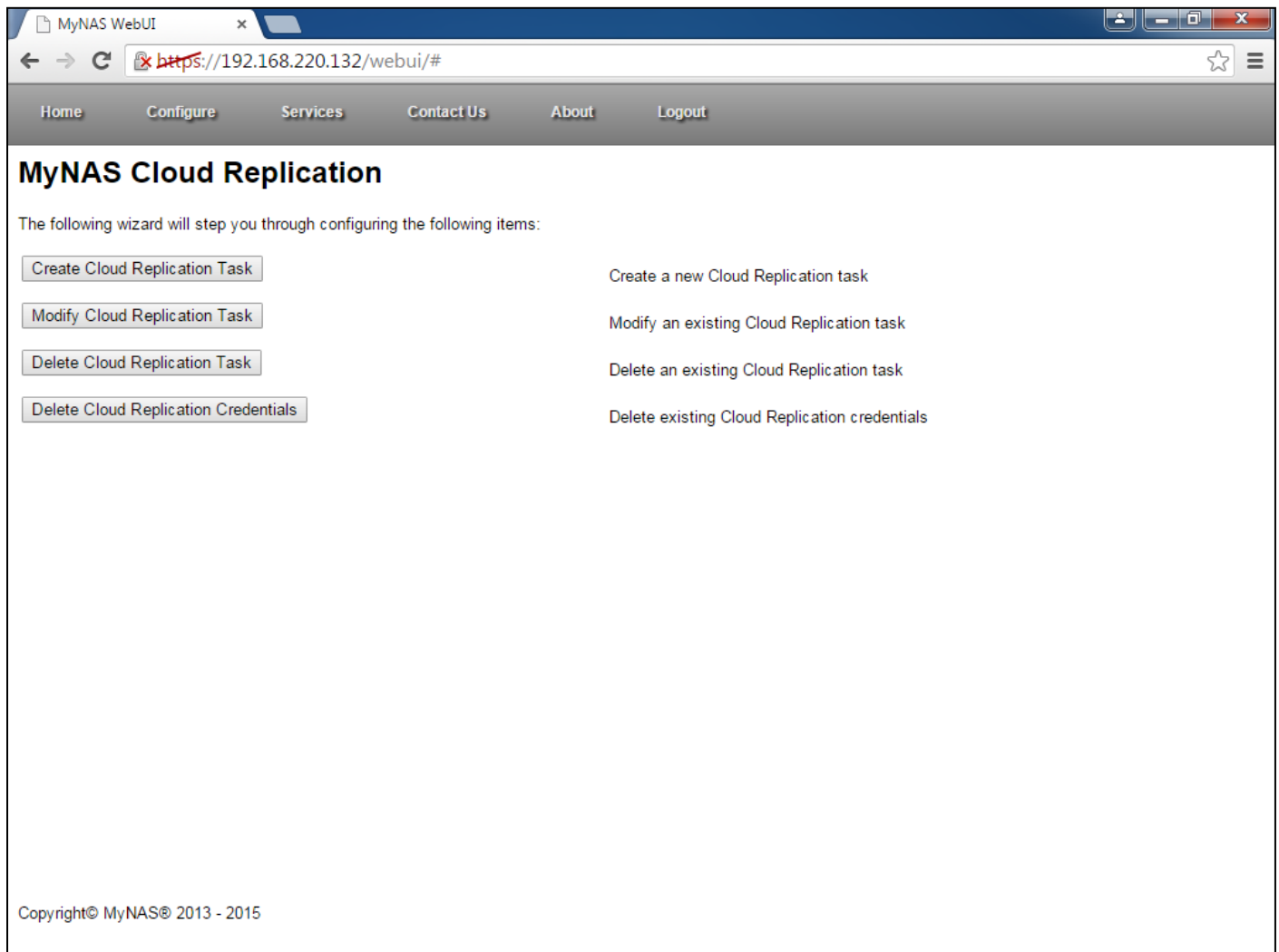
Name	Size	Modified
ecryptfs	2.5 MB	28 minutes ago
SMPP	1.2 MB	30 minutes ago
564DDC64-74A4-4FAC-C4E2-A47E11FC56F6.backup	108 kB	5 days ago
2 folders and 1 file		3.8 MB

Modify an existing Cloud Replication Task

Modifying an existing Cloud Replication Task allows you to add or remove a replication partner, or change some of the options used when performing the replication.

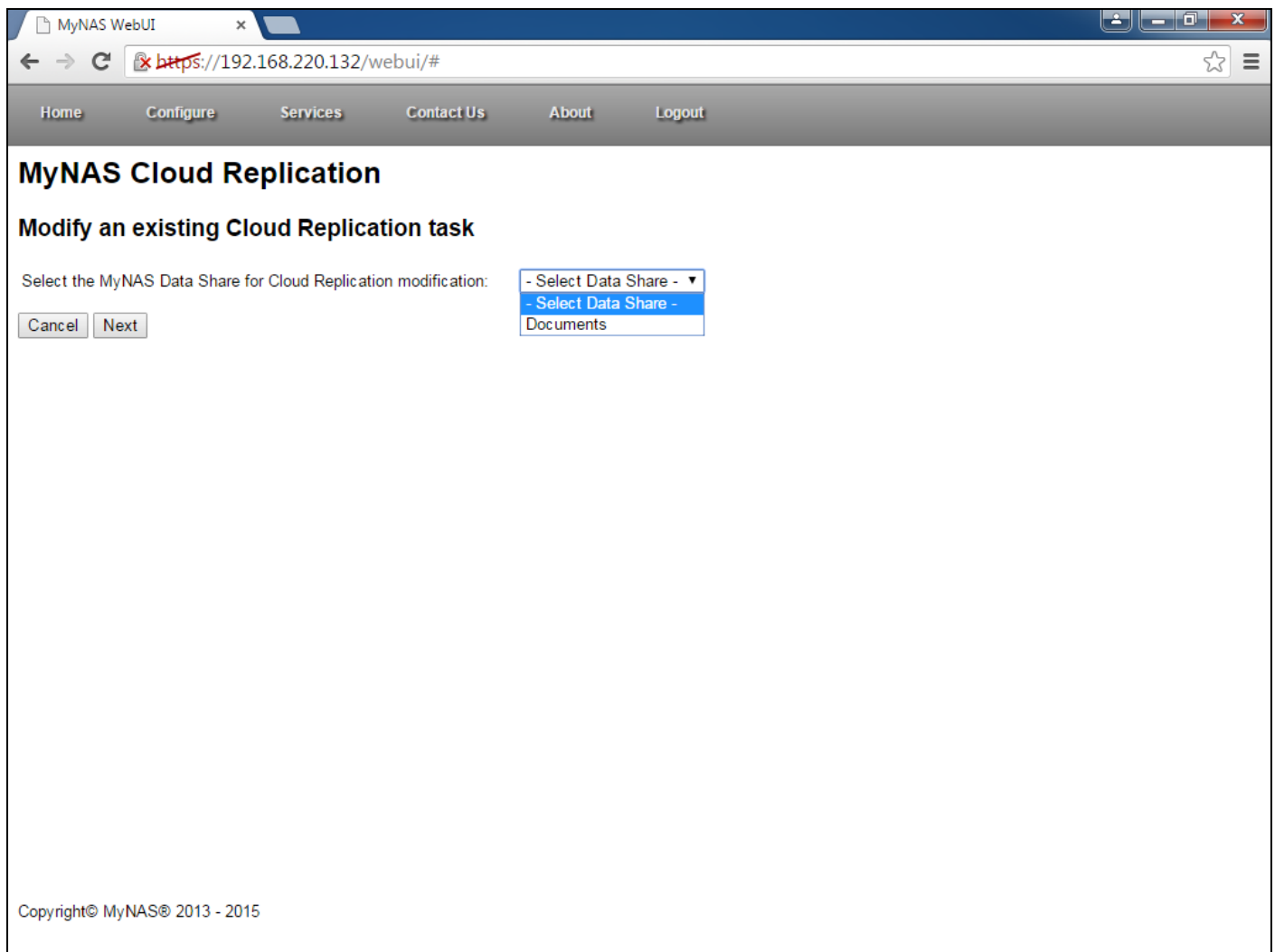
To modify an existing Cloud Replication Task on your MyNAS storage appliance, follow the directions below.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Cloud Replication'. Once selected, the following will be displayed:



To modify an existing Cloud Replication Task, click the 'Modify Cloud Replication Task' button.

Select the Data Share to modify the Cloud Replication settings for:



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MyNAS Cloud Replication

Modify an existing Cloud Replication task

Select the MyNAS Data Share for Cloud Replication modification:

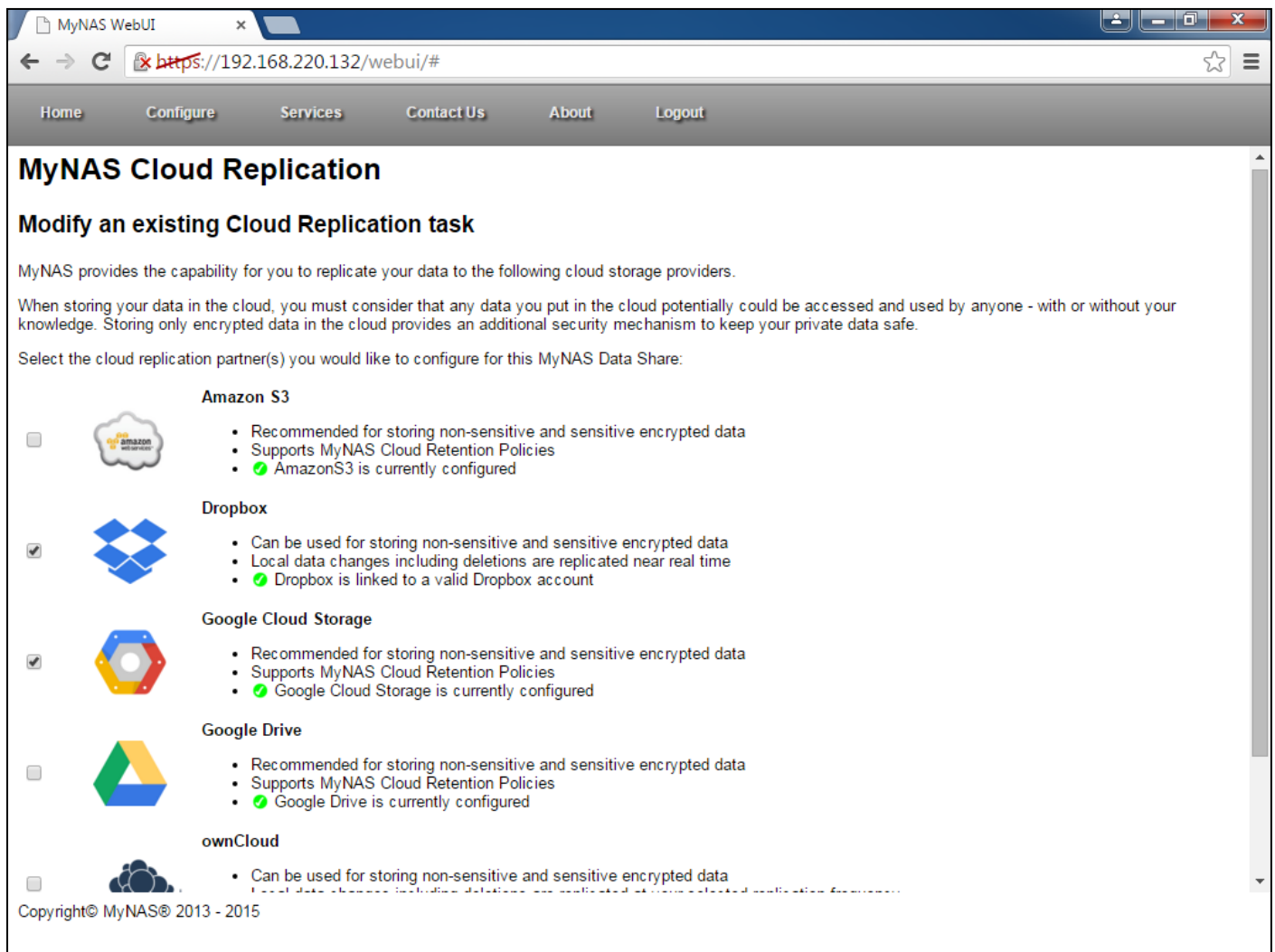
Cancel Next

- Select Data Share -
- Select Data Share -
Documents

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Once selected, click 'Next'

Change which Cloud Replication Partners you wish to use for this data share replication:



Once the replication partners are selected, click 'Next'

If any replication partners are being removed, the following question will be asked:

Do you wish to remove data from these replication partners as part of this process?

This is a good way to automatically clean up your data from Cloud Replication partners.

MyNAS WebUI

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MyNAS Cloud Replication

Modify an existing Cloud Replication task

Based on your cloud replication partner selections, you have removed the following replication partners for this data share:

- Amazon 3S
- Google Drive
- ownCloud

What do you want to do with your data hosted in the Cloud for this data share?

☒ Keep files in the Cloud. I will delete them manually.

☐ Delete files in the Cloud.

Cancel Next

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Selection the option you wish to use and click 'Next'

Modify the replication frequency if desired

MyNAS WebUI x

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MyNAS Cloud Replication

Modify an existing Cloud Replication task

How often do you wish to synchronise your data with your chosen replication partners?

- ☒ Frequent Data is synchronised every 15 minutes
- ☒ Hourly Data is synchronised hourly
- ☒ Daily Data is synchronised Daily at 1AM
- ☒ Weekly Data is synchronised Weekly at 1AM
- ☒ Monthly Data is synchronised Monthly at 1AM

Note: Dropbox replicates automatically independent of any set schedule

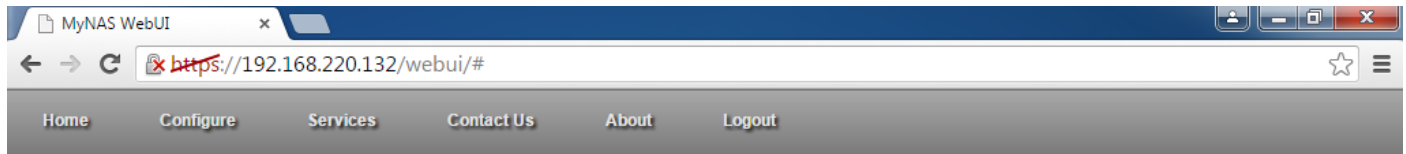
Cancel Next

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Once configured, click 'Next'

When selecting AmazonS3, Google Cloud Storage and Google Drive, MyNAS Storage Appliance has the capability to utilise Cloud Retention Policies.

These policies allow you to have these Cloud Replication Targets provide the capability to restore your data if you accidentally delete an important file.



MyNAS Cloud Replication

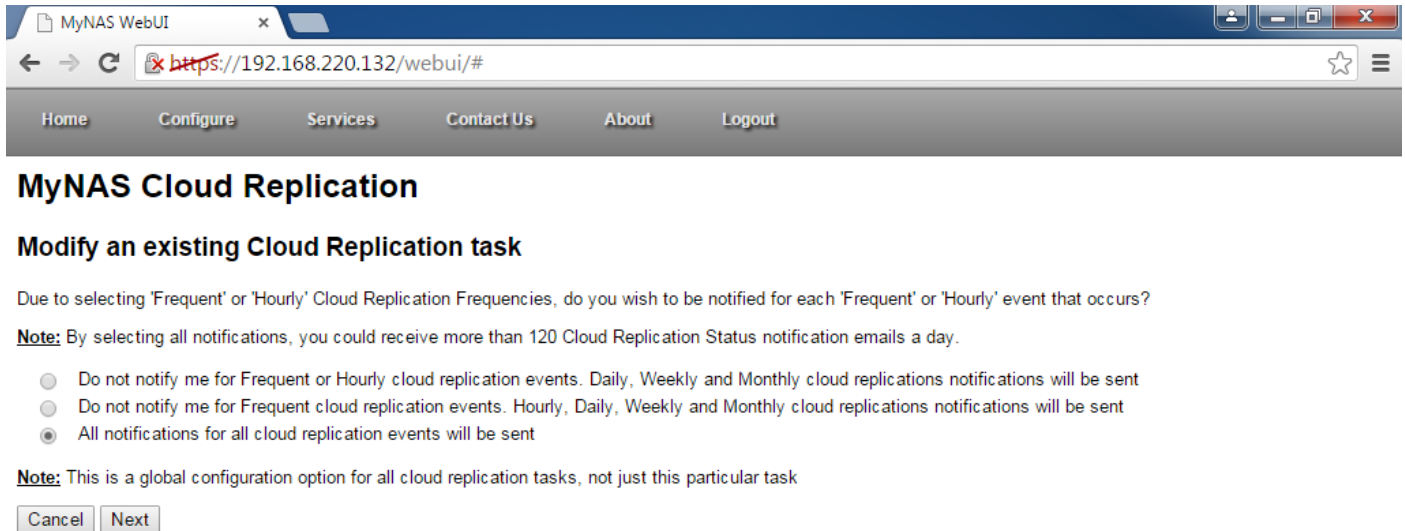
Modify an existing Cloud Replication task

Select the appropriate Cloud Data Retention Policy for your data:

- ☒ Keep files in the Cloud when I delete them locally. I will manually restore files if I require them. I will delete my files in the Cloud myself.
- ☐ Keep files in the Cloud when I delete them locally. I want my deleted files to be restored automatically. I will delete my files in the Cloud myself.
- ☐ Delete files in the Cloud automatically when I delete them locally.
Note: If you select this option you remove your safety net if you accidentally delete an important file.

Modify the Cloud Retention policy if required and click 'Next'

Depending on the frequency selected, this could generate a significant number of messages per day. Select the appropriate notification frequency for you for all Cloud Replication Tasks



MyNAS WebUI

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MyNAS Cloud Replication

Modify an existing Cloud Replication task

Due to selecting 'Frequent' or 'Hourly' Cloud Replication Frequencies, do you wish to be notified for each 'Frequent' or 'Hourly' event that occurs?

Note: By selecting all notifications, you could receive more than 120 Cloud Replication Status notification emails a day.

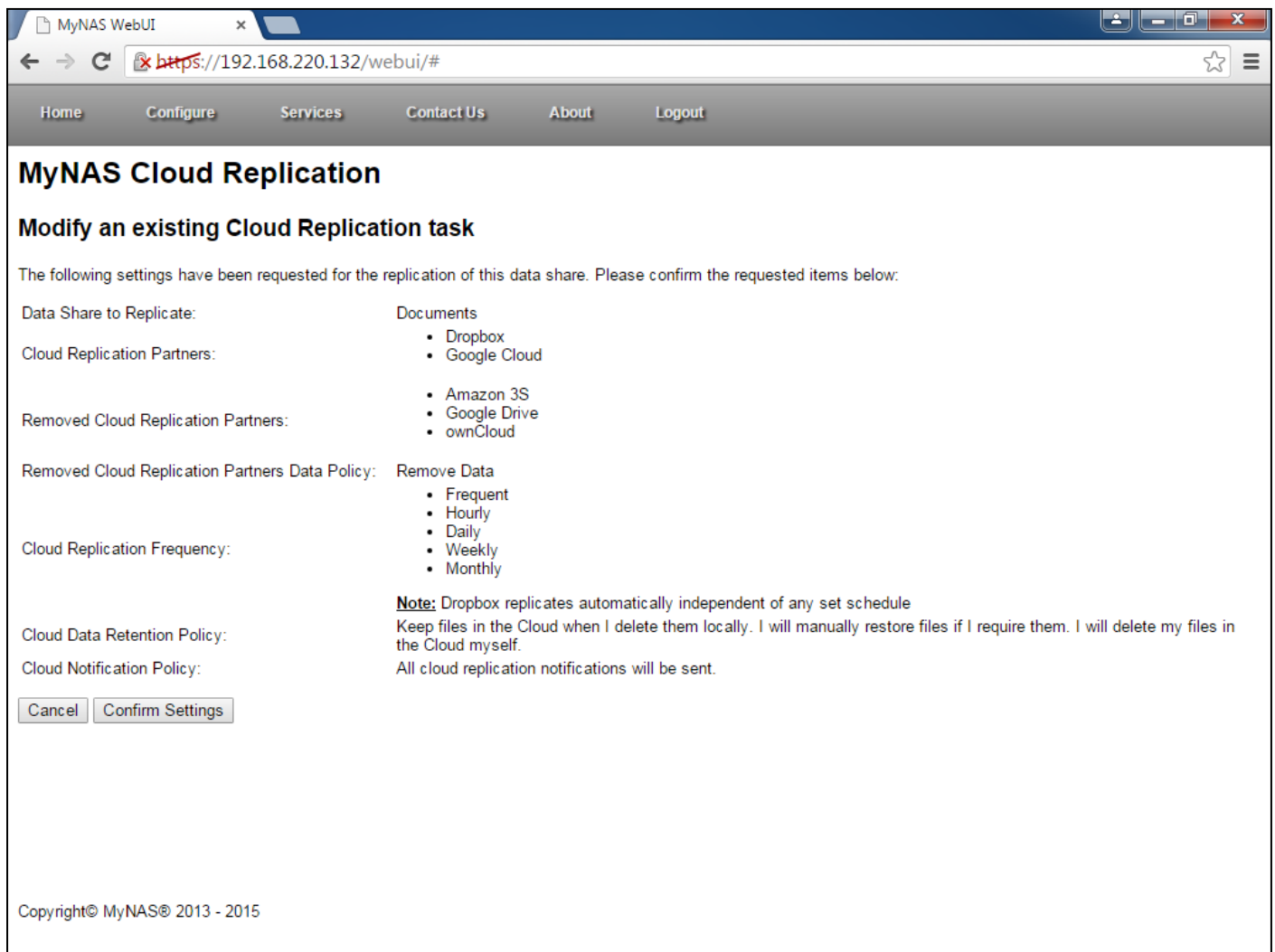
- ☐ Do not notify me for Frequent or Hourly cloud replication events. Daily, Weekly and Monthly cloud replications notifications will be sent
- ☐ Do not notify me for Frequent cloud replication events. Hourly, Daily, Weekly and Monthly cloud replications notifications will be sent
- ☒ All notifications for all cloud replication events will be sent

Note: This is a global configuration option for all cloud replication tasks, not just this particular task

Cancel Next

Modify the notification frequency if required and click 'Next'

Confirm the modification settings as displayed



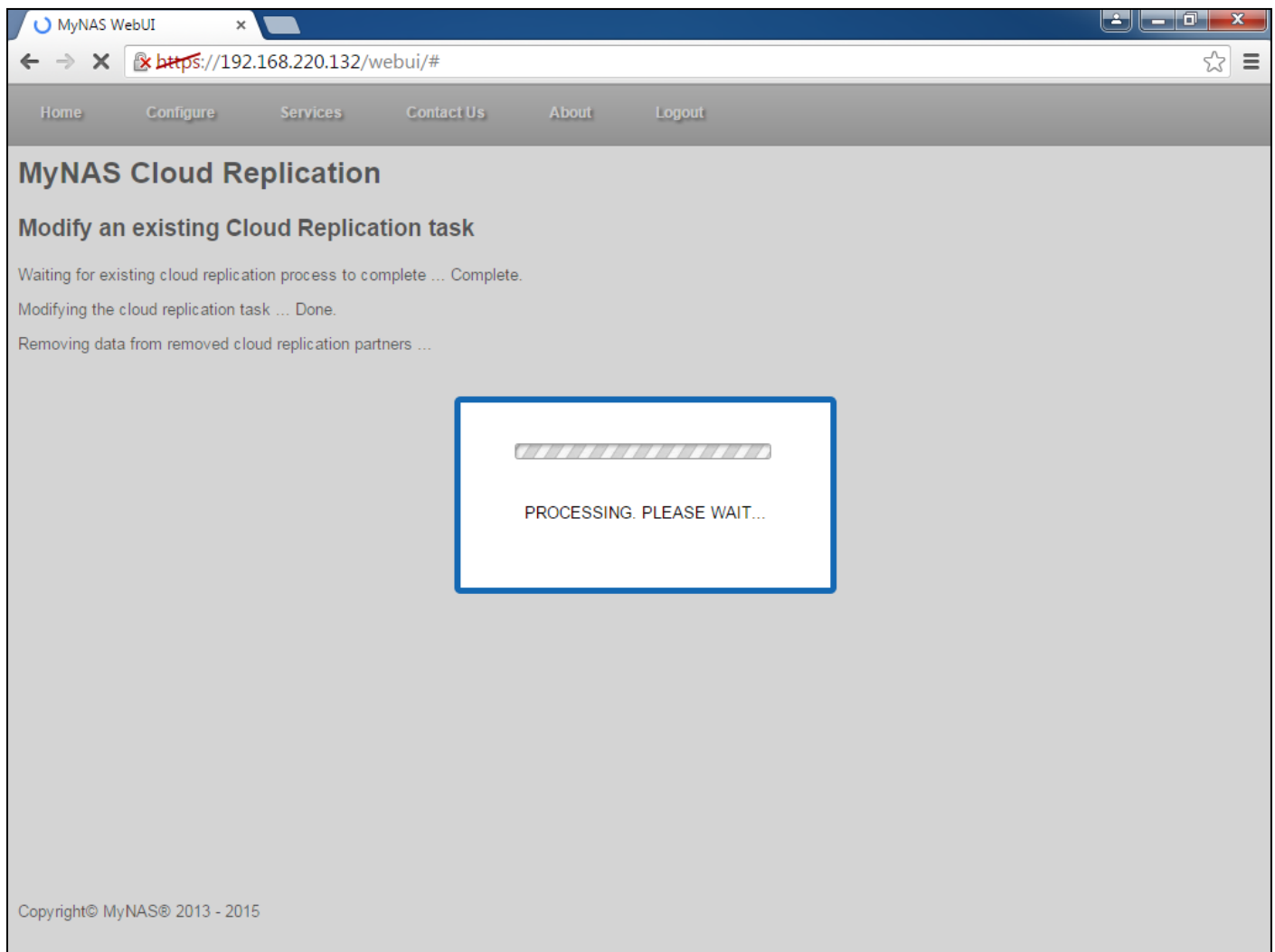
The screenshot shows the MyNAS WebUI interface in a web browser. The browser's address bar displays the URL <https://192.168.220.132/webui/#>. The navigation menu at the top includes links for Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled 'MyNAS Cloud Replication' and 'Modify an existing Cloud Replication task'. A message states: 'The following settings have been requested for the replication of this data share. Please confirm the requested items below:'. The settings are listed in two columns:

Data Share to Replicate:	Documents
Cloud Replication Partners:	<ul style="list-style-type: none">• Dropbox• Google Cloud
Removed Cloud Replication Partners:	<ul style="list-style-type: none">• Amazon 3S• Google Drive• ownCloud
Removed Cloud Replication Partners Data Policy:	Remove Data
	<ul style="list-style-type: none">• Frequent• Hourly• Daily• Weekly• Monthly
Cloud Replication Frequency:	
Cloud Data Retention Policy:	Note: Dropbox replicates automatically independent of any set schedule Keep files in the Cloud when I delete them locally. I will manually restore files if I require them. I will delete my files in the Cloud myself.
Cloud Notification Policy:	All cloud replication notifications will be sent.

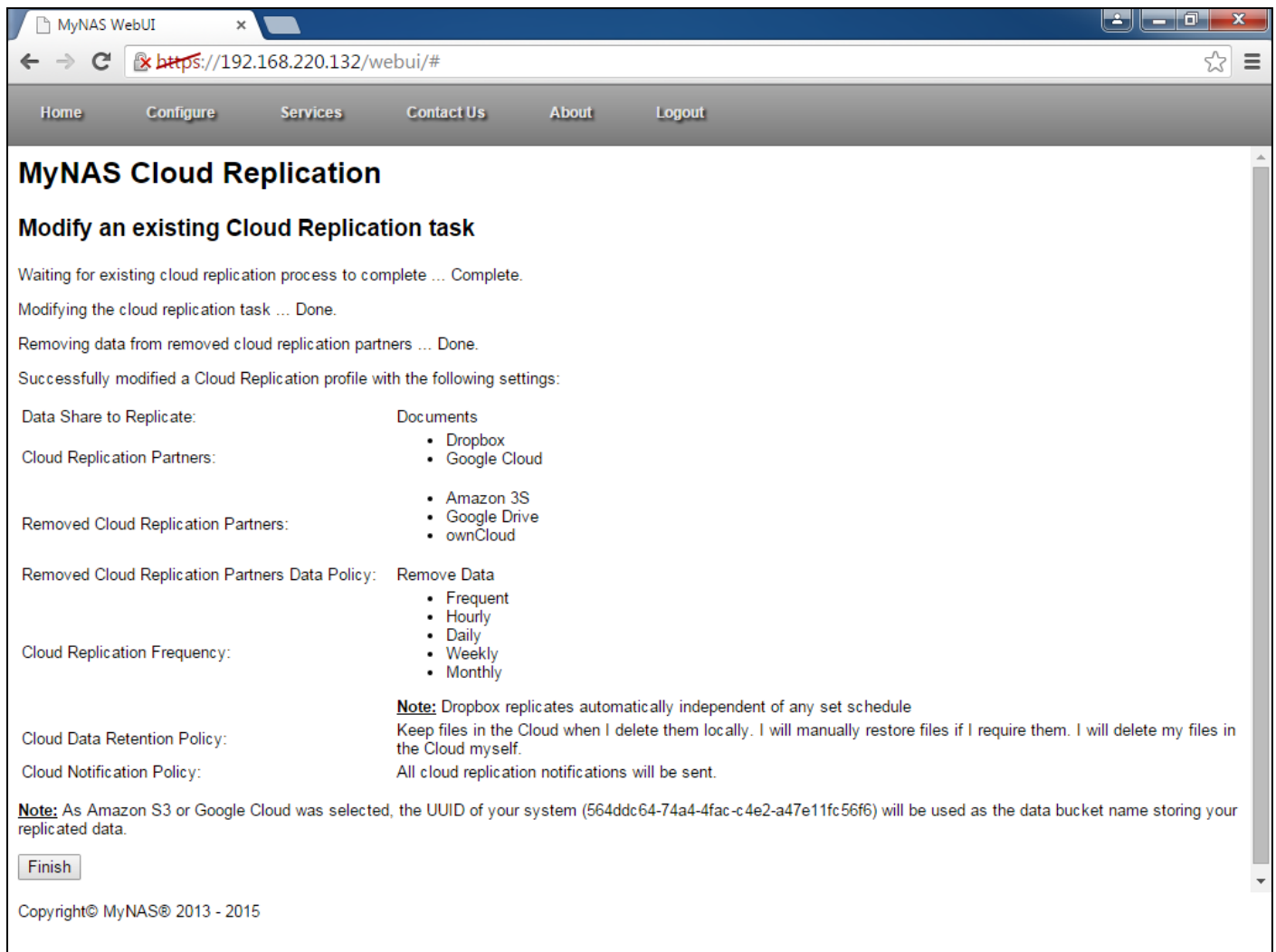
At the bottom of the settings section, there are two buttons: 'Cancel' and 'Confirm Settings'. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

If the settings are correct, click the 'Confirm Settings' button.

MyNAS will now process the required changes for the replication task modification



Once the modification process is complete the following will be displayed:



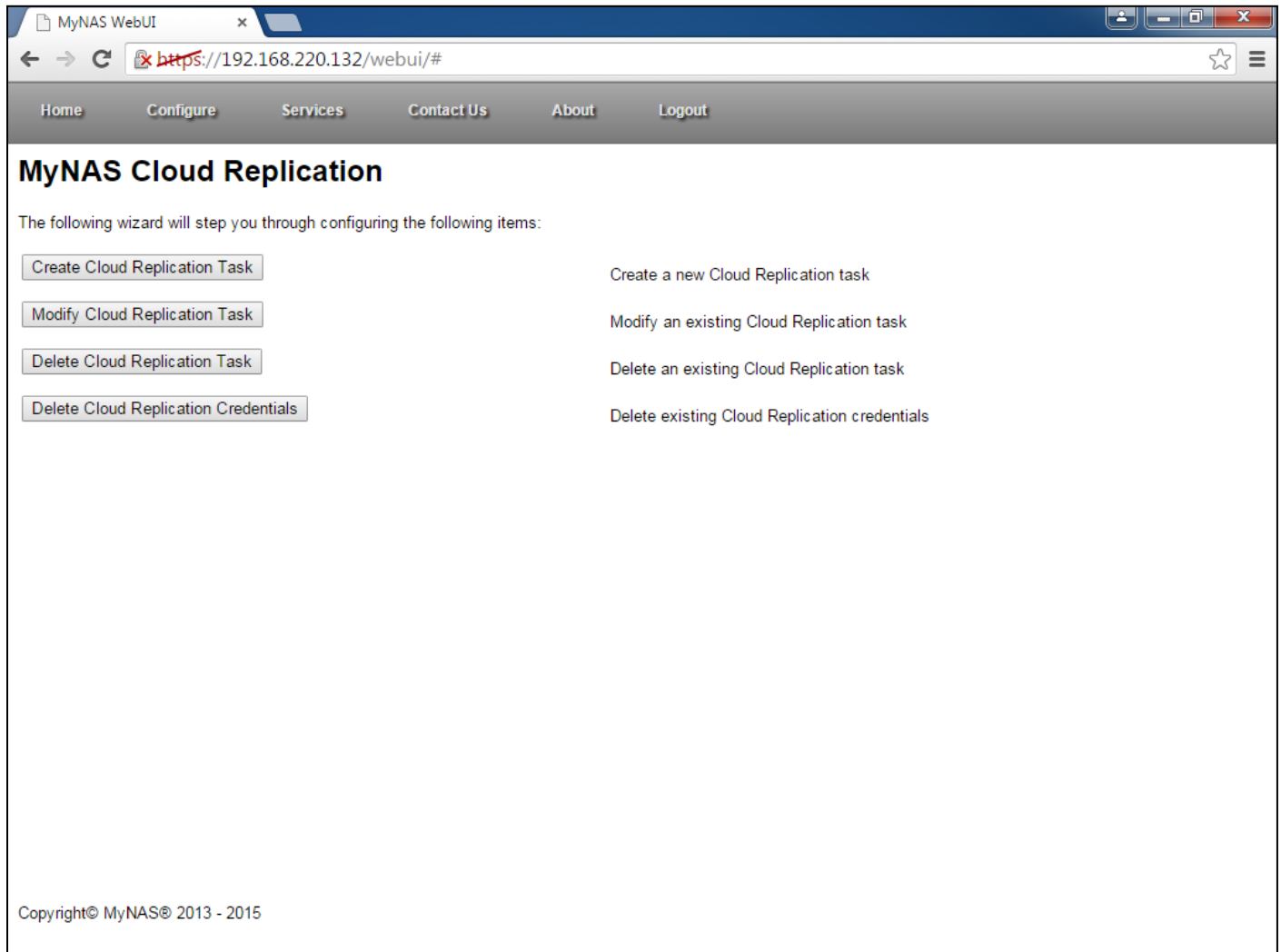
Click 'Finish' to close the modification wizard.

Delete a Cloud Replication Task

Deleting a Cloud Replication Task allows you to remove an existing MyNAS Data Share from being replicated externally.

To delete an existing Cloud Replication Task on your MyNAS storage appliance, follow the directions below.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Cloud Replication'. Once selected, the following will be displayed:



To delete a Cloud Replication Task, click the 'Delete Cloud Replication Task' button.

Select the MyNAS Data Share to remove the Cloud Replication Task for

MyNAS WebUI

https://192.168.220.132/webui/#

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MyNAS Cloud Replication

Delete an existing Cloud Replication task

Select the MyNAS Data Share to remove from Cloud Replication:

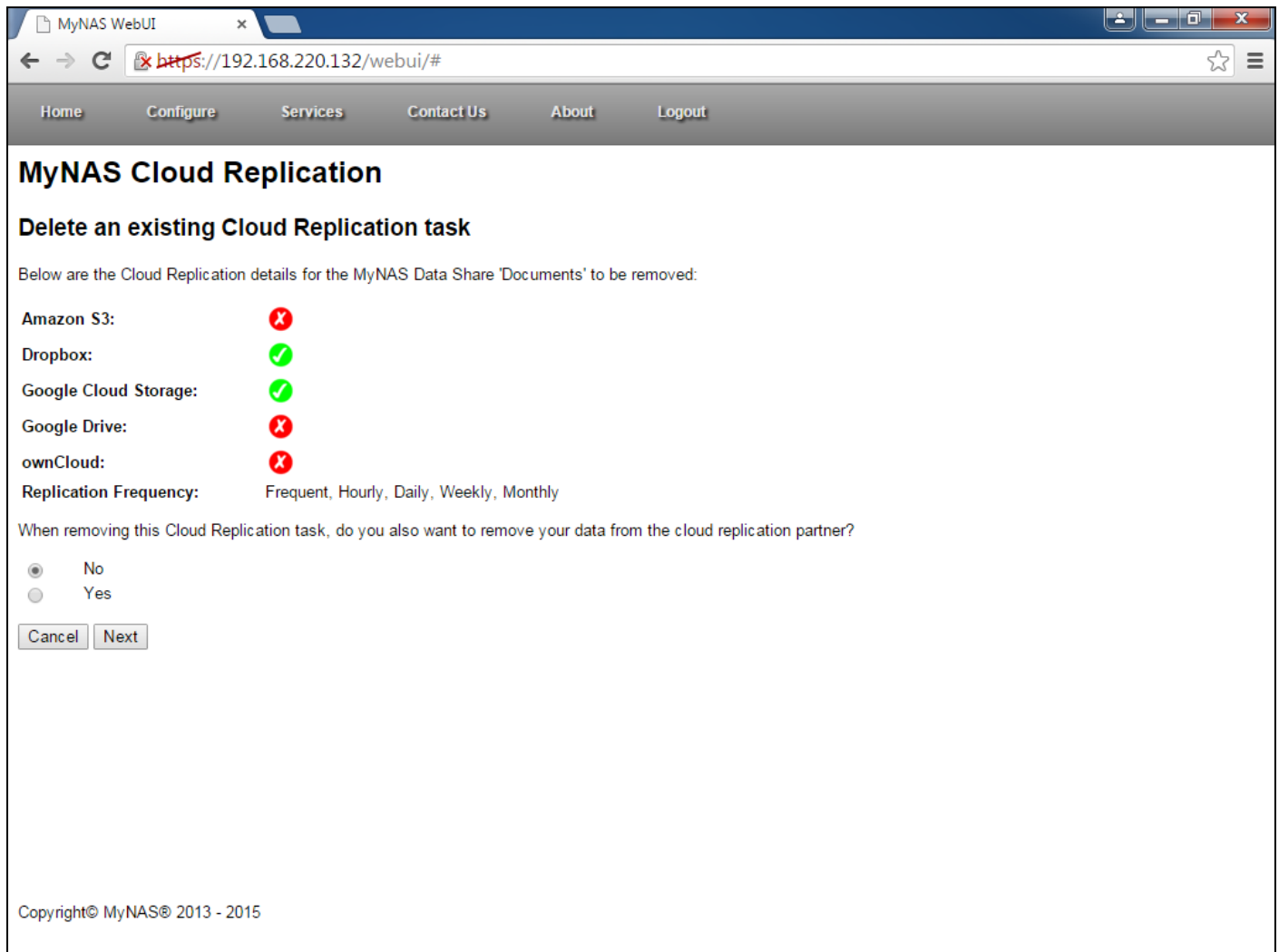
Cancel Next

- Select Data Share -
- Select Data Share -
Documents

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Once selected, click 'Next'

MyNAS will now prompt regarding Cloud Data removal. This provides an easy and automatic way to clean up your files in the cloud



MyNAS WebUI

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MyNAS Cloud Replication

Delete an existing Cloud Replication task

Below are the Cloud Replication details for the MyNAS Data Share 'Documents' to be removed:

Amazon S3:	✗
Dropbox:	✓
Google Cloud Storage:	✓
Google Drive:	✗
ownCloud:	✗
Replication Frequency:	Frequent, Hourly, Daily, Weekly, Monthly

When removing this Cloud Replication task, do you also want to remove your data from the cloud replication partner?

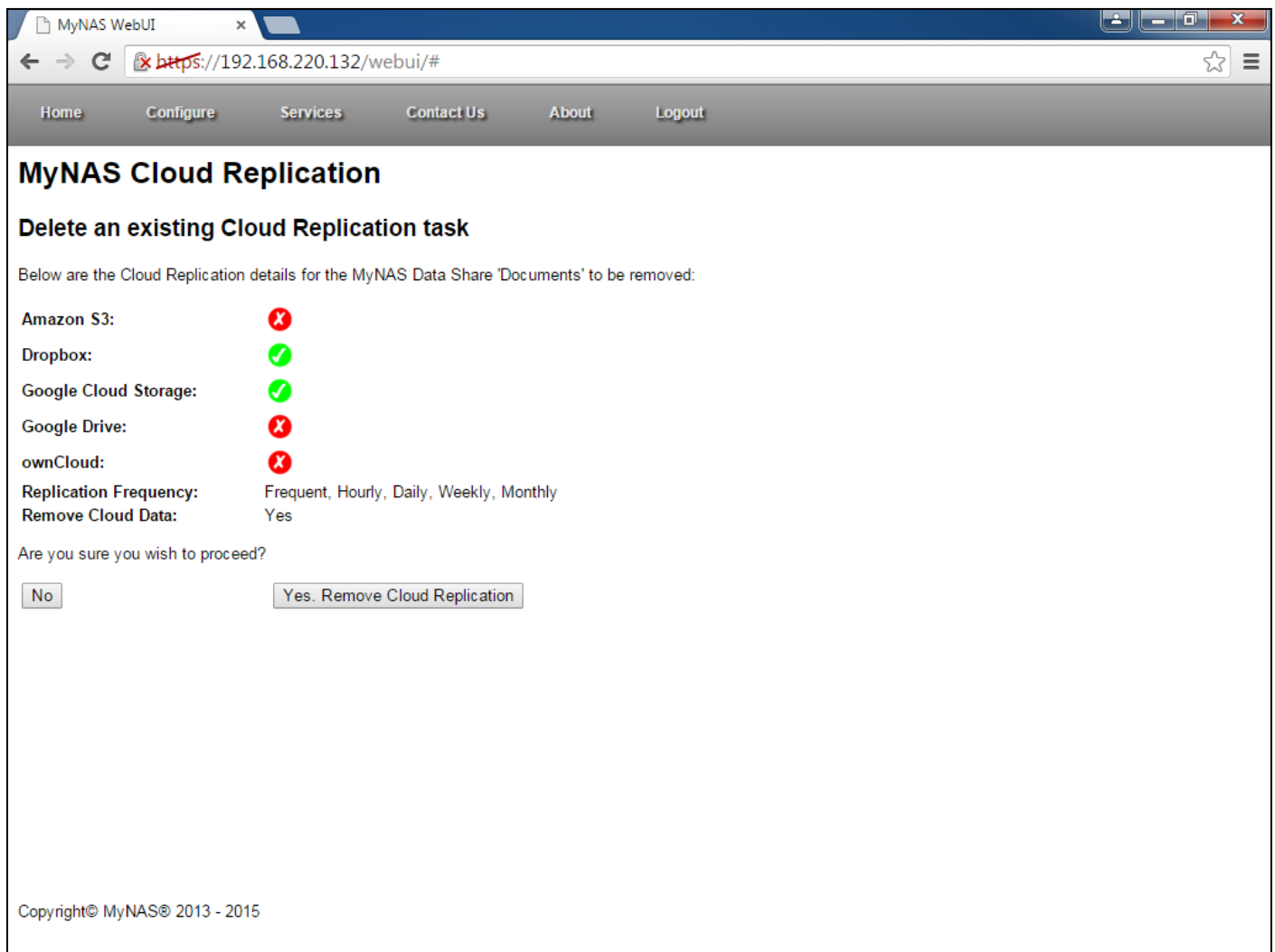
☒ No
☐ Yes

Cancel Next

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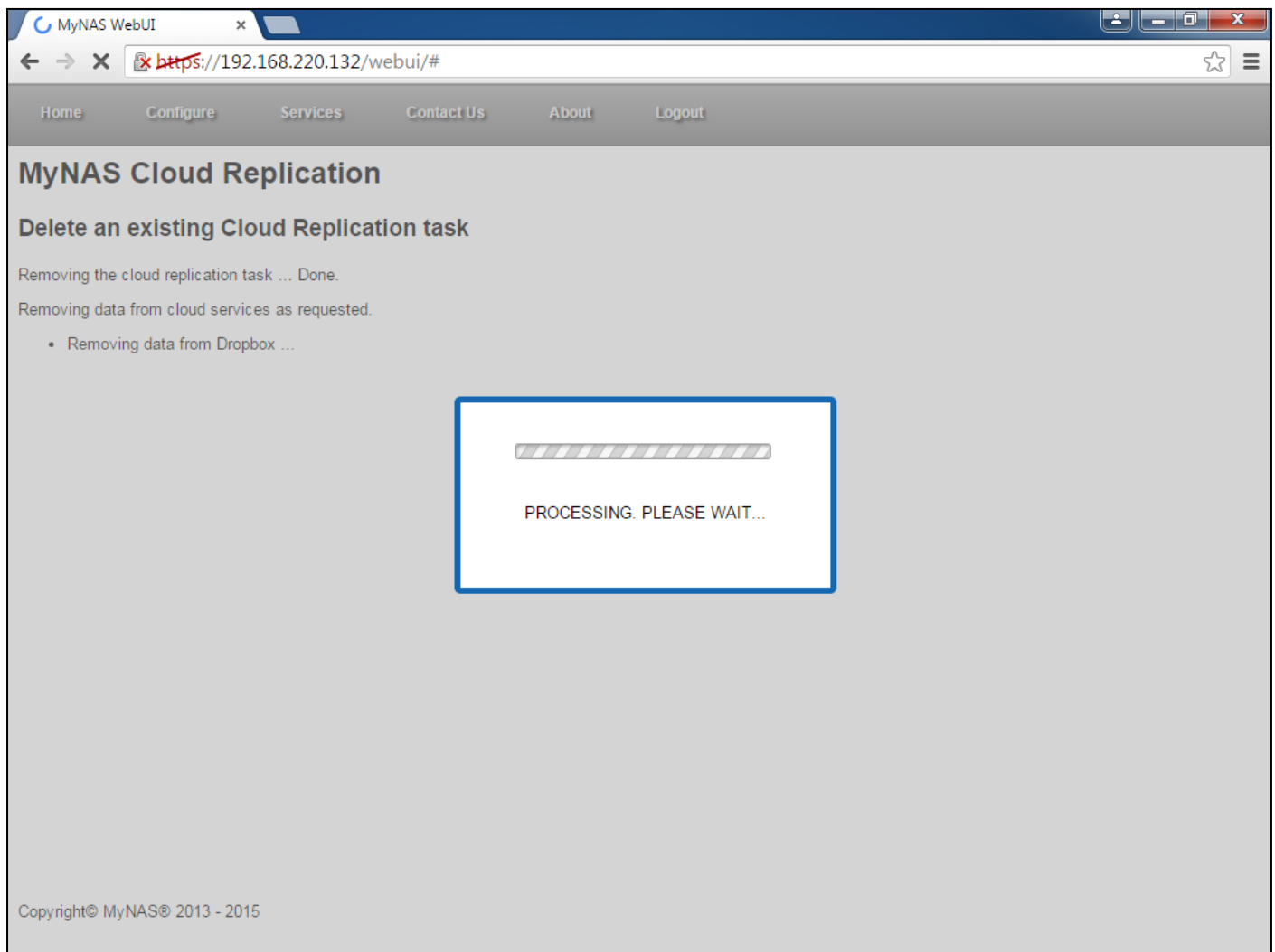
Select the option you wish to use and click 'Next'

Confirm the settings requested for the Cloud Replication Task Removal

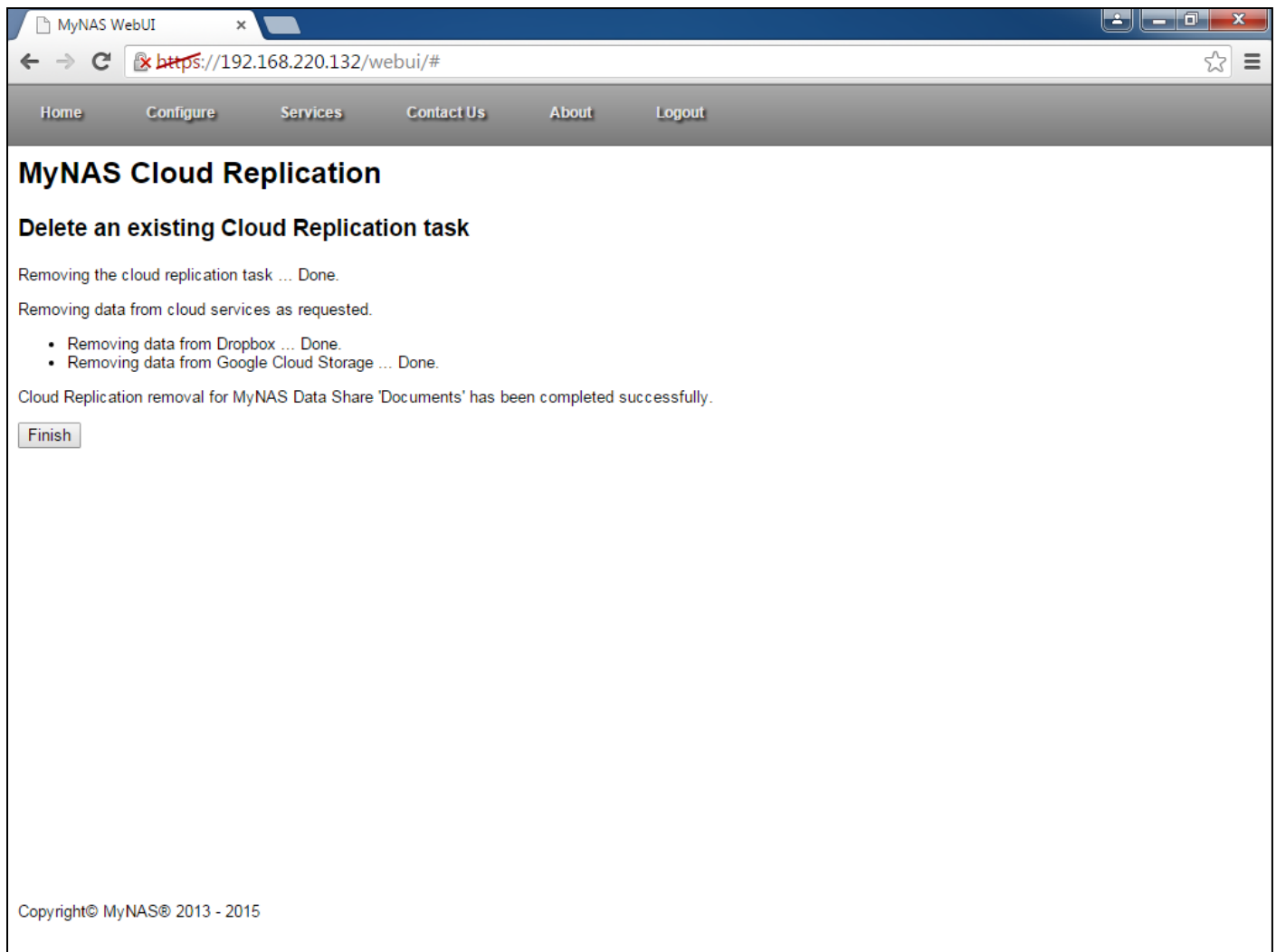


Once confirmed, click the 'Yes. Remove Cloud Replication' button.

MyNAS will now process the Cloud Replication Task removal, and process removing any data if requested



Once this task is complete the following will be displayed



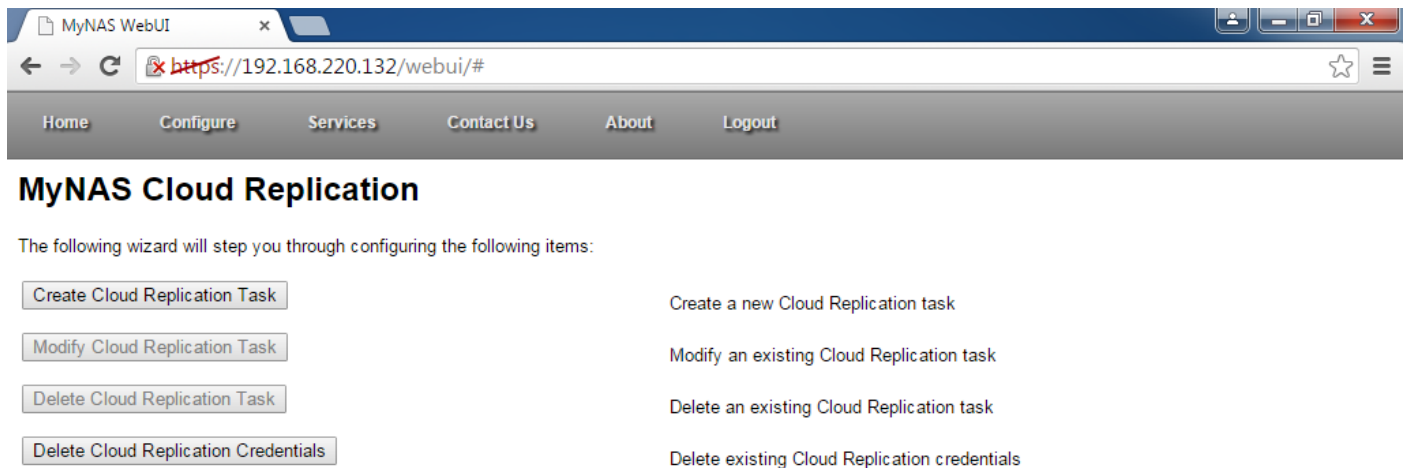
Click 'Finish' to complete the wizard.

Delete Cloud Replication Credentials

Delete Cloud Replication Credentials provides the capability to remove the credentials used to store your data with the Cloud Storage Providers

To delete Cloud Replication Credentials on your MyNAS storage appliance, follow the directions below.

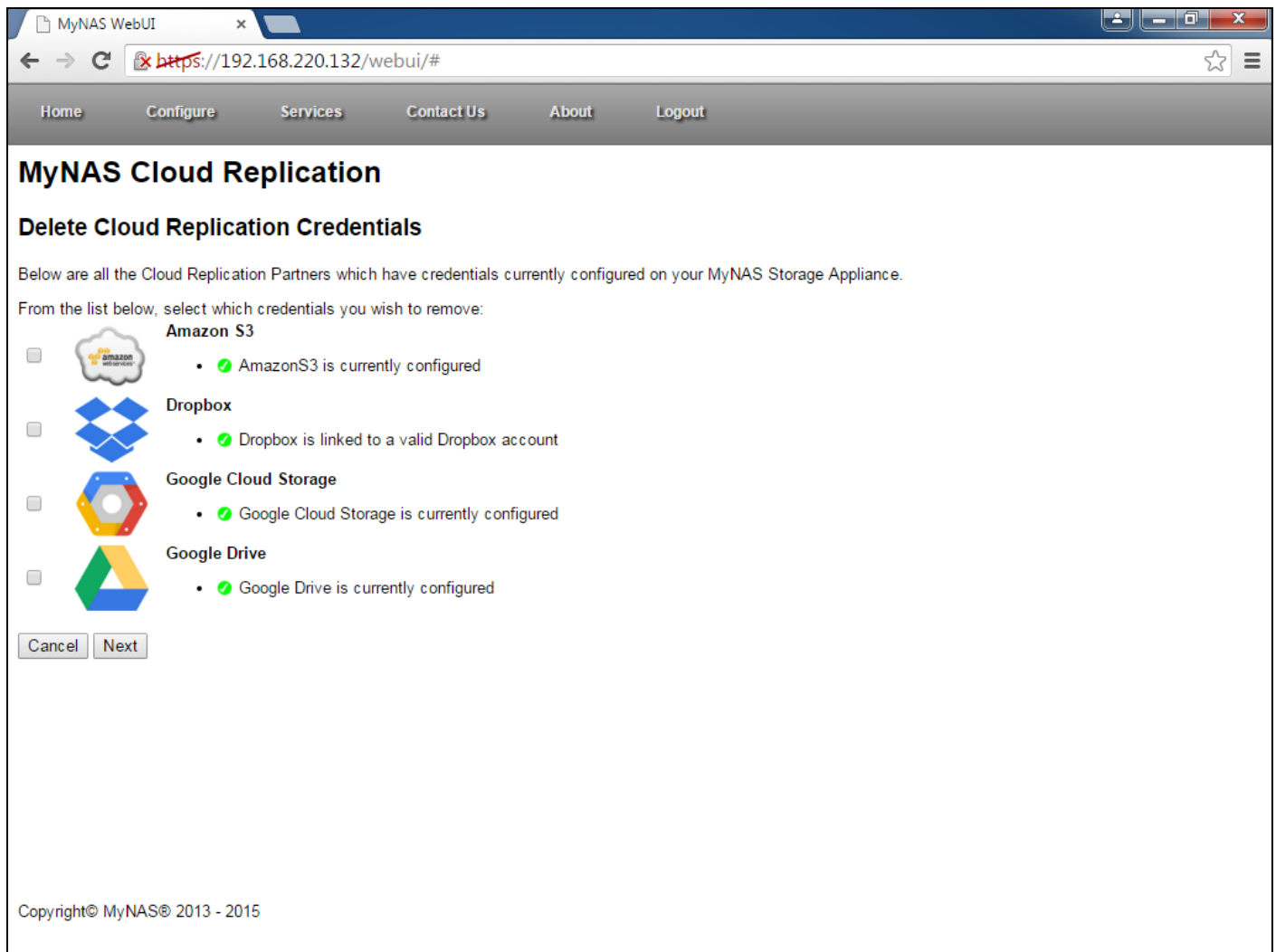
Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Cloud Replication'. Once selected, the following will be displayed:



To delete Cloud Replication Credentials, click the 'Delete Cloud Replication Credentials' button

Select the Cloud Replication Credentials you wish to remove from your MyNAS Storage Appliance

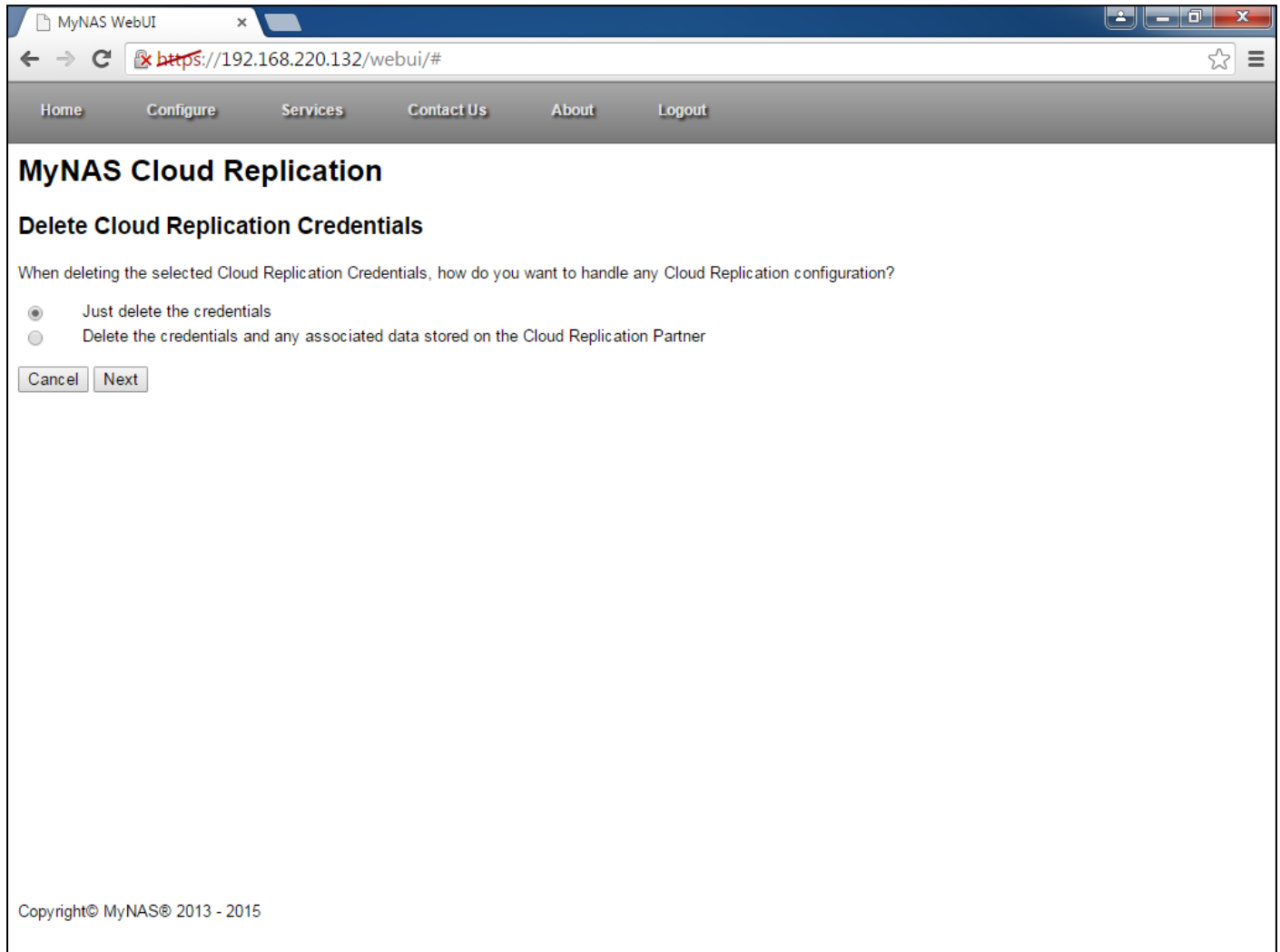
Note: As ownCloud credentials are stored differently, when a Cloud Replication Task involving an ownCloud Provider is removed, the credentials are automatically removed.



Select the credentials you wish to remove and click 'Next'

MyNAS provides an automatic capability to clean up any data on those Cloud Providers before removing the credentials.

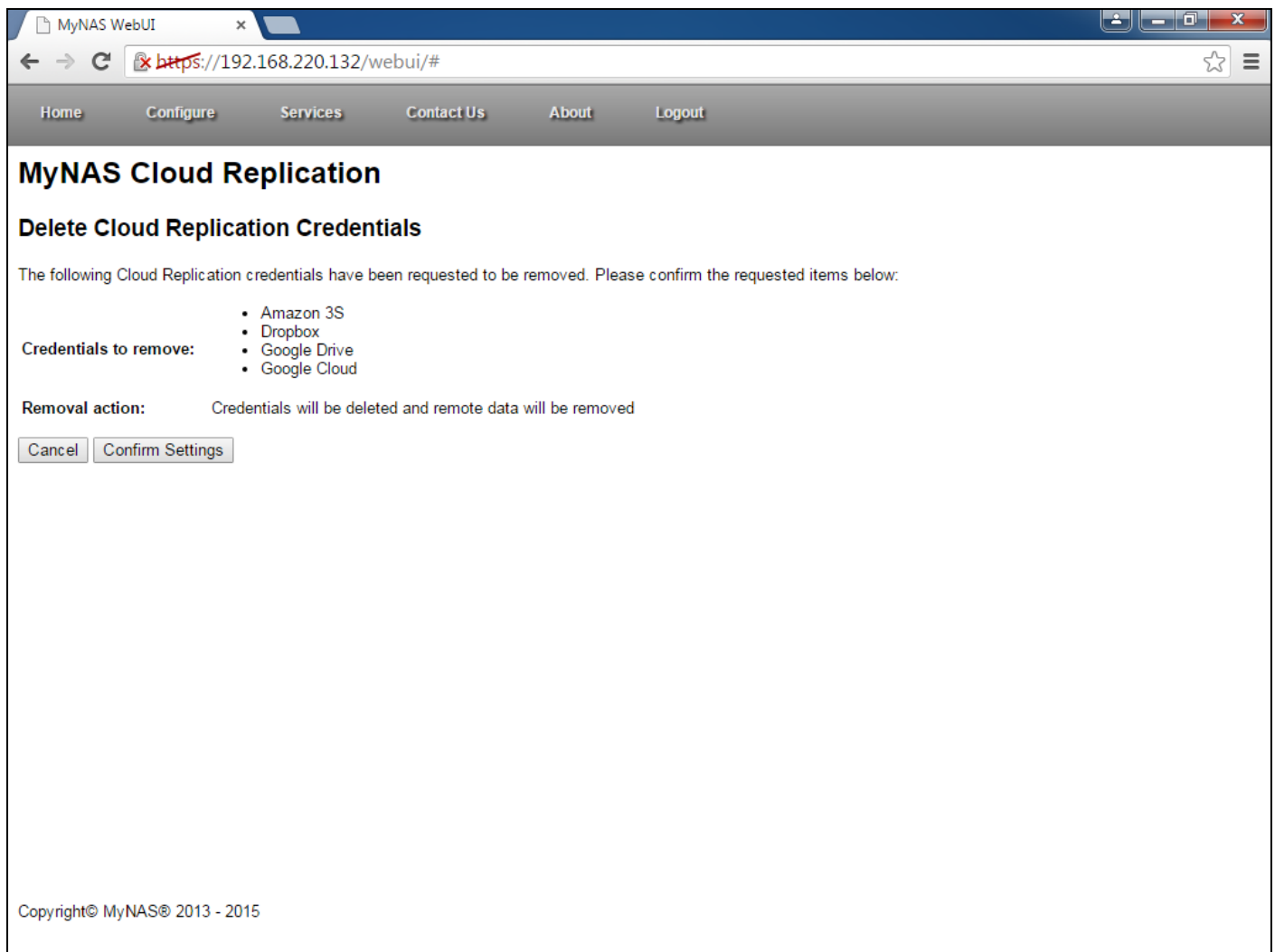
This may be handy when we are removing the credentials from MyNAS, but we may still have replication tasks or data. This will clean up any data if required from those affected Cloud Providers



The screenshot shows a web browser window titled 'MyNAS WebUI' with the address bar displaying 'https://192.168.220.132/webui/#'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Cloud Replication' and contains a section 'Delete Cloud Replication Credentials'. Below this section, a question asks: 'When deleting the selected Cloud Replication Credentials, how do you want to handle any Cloud Replication configuration?'. There are two radio button options: 'Just delete the credentials' (which is selected) and 'Delete the credentials and any associated data stored on the Cloud Replication Partner'. At the bottom of the form are 'Cancel' and 'Next' buttons. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

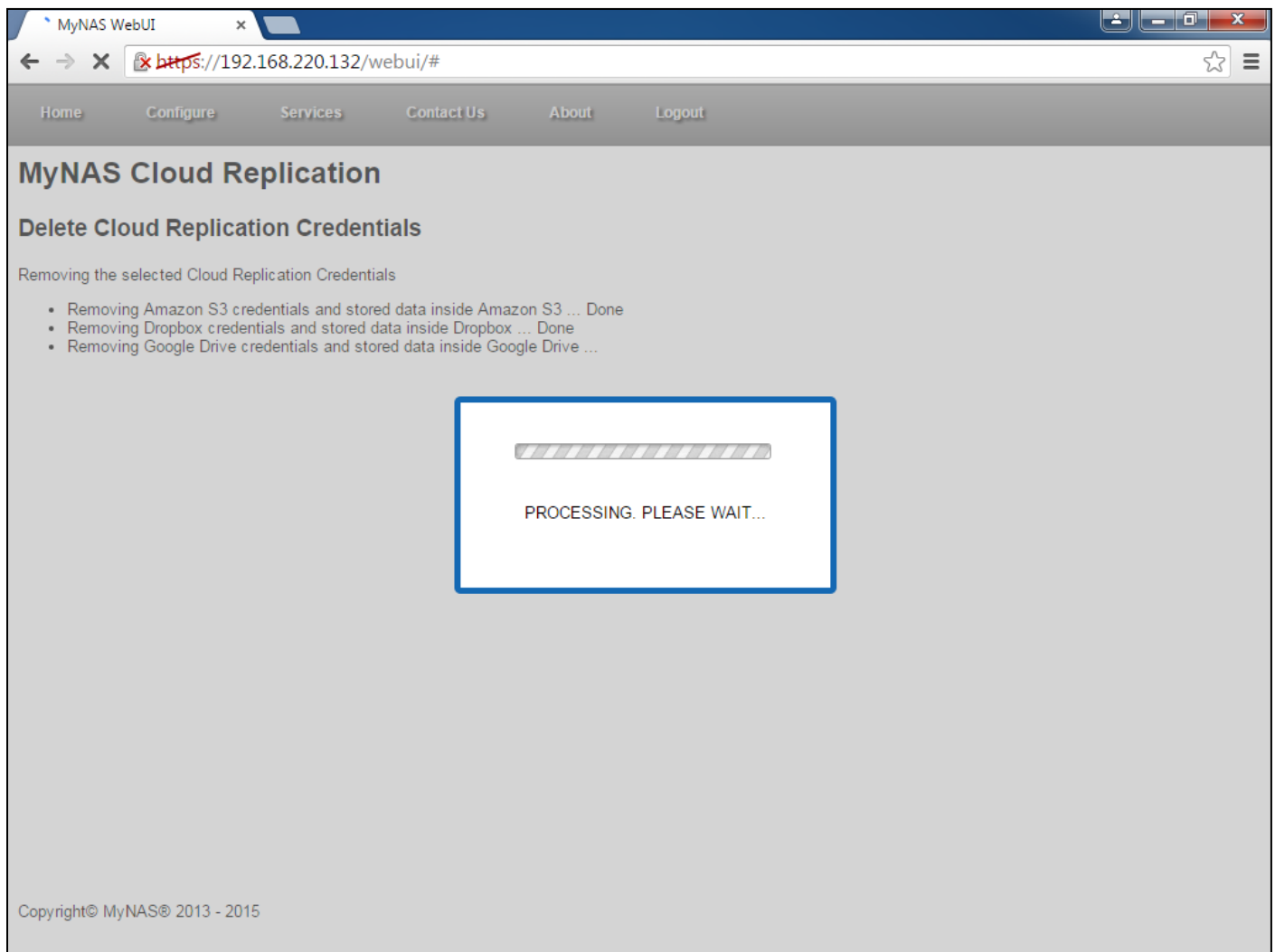
Select the applicable data handling option and click 'Next'

Confirm the settings requested

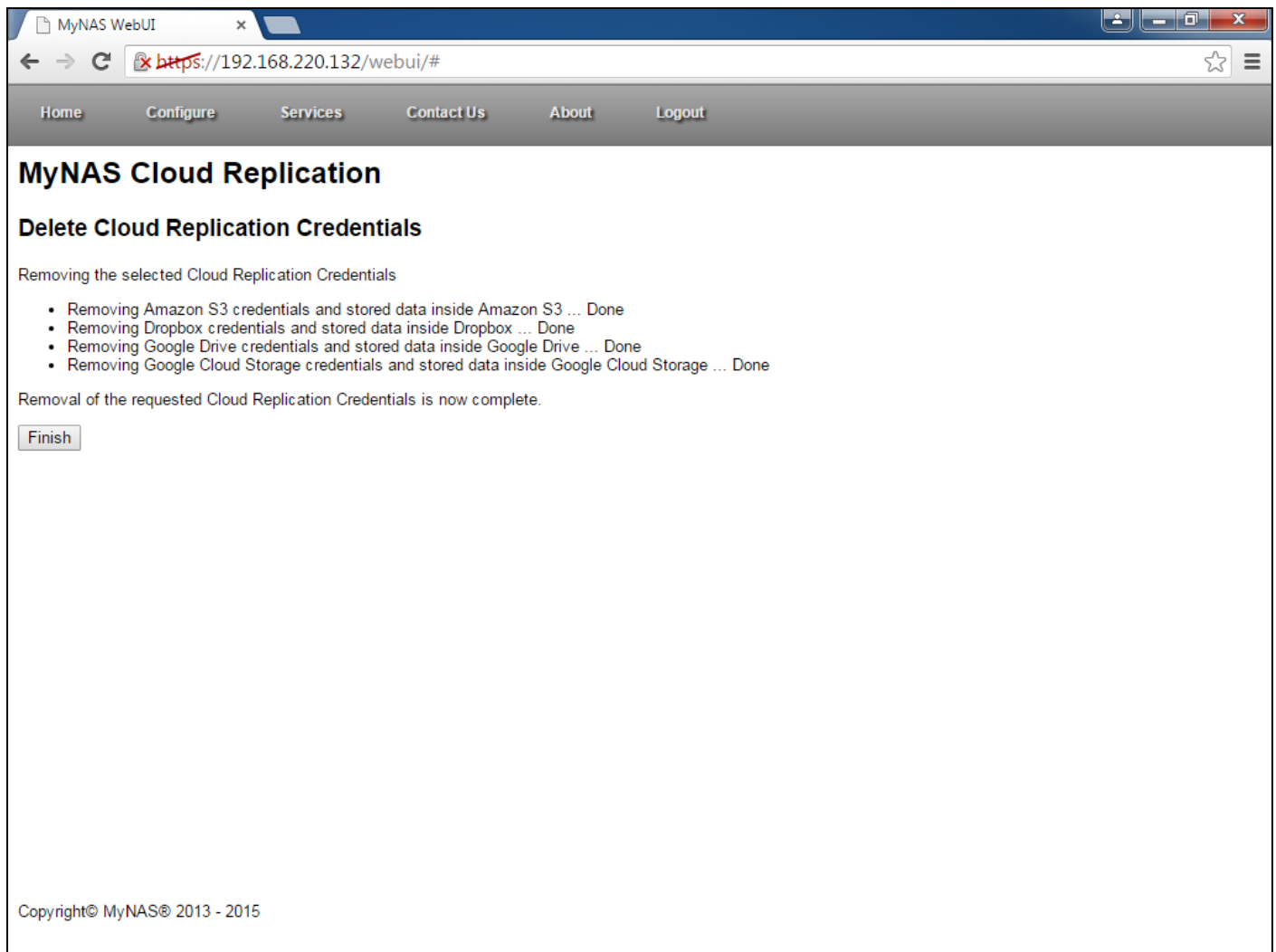


Once the settings are confirmed, click 'Confirm Settings'

MyNAS will now process the credential removal including data removal if selected



Once complete the following will be displayed:



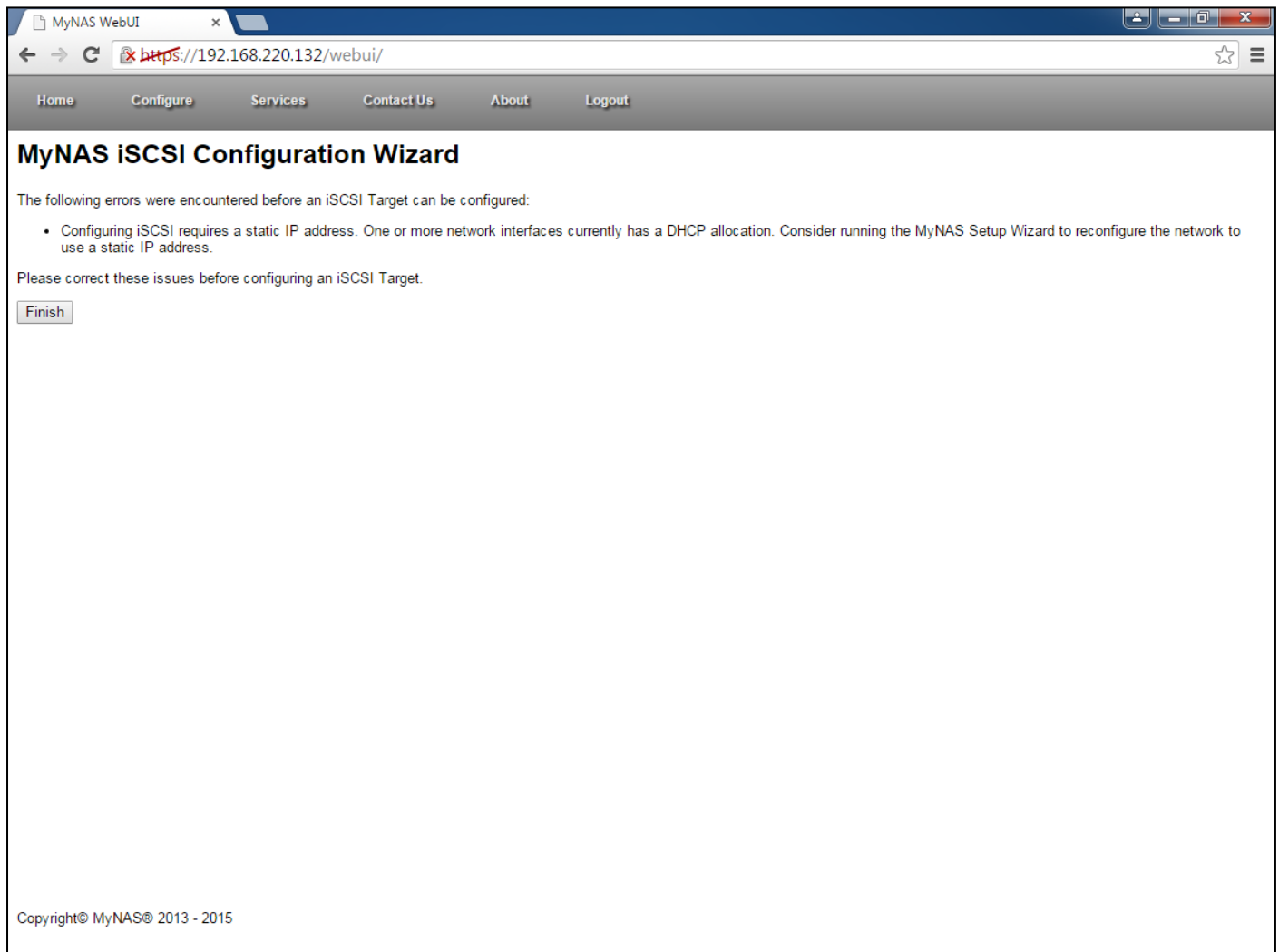
Click 'Finish' to complete the wizard

Using iSCSI and your MyNAS® Storage Appliance

iSCSI provides the capability for you to use your MyNAS storage appliance just like another drive on your local computer - when you are connected to your network at home.

The iSCSI Target can be used with Windows, Linux, Apple and VMware ESXi.

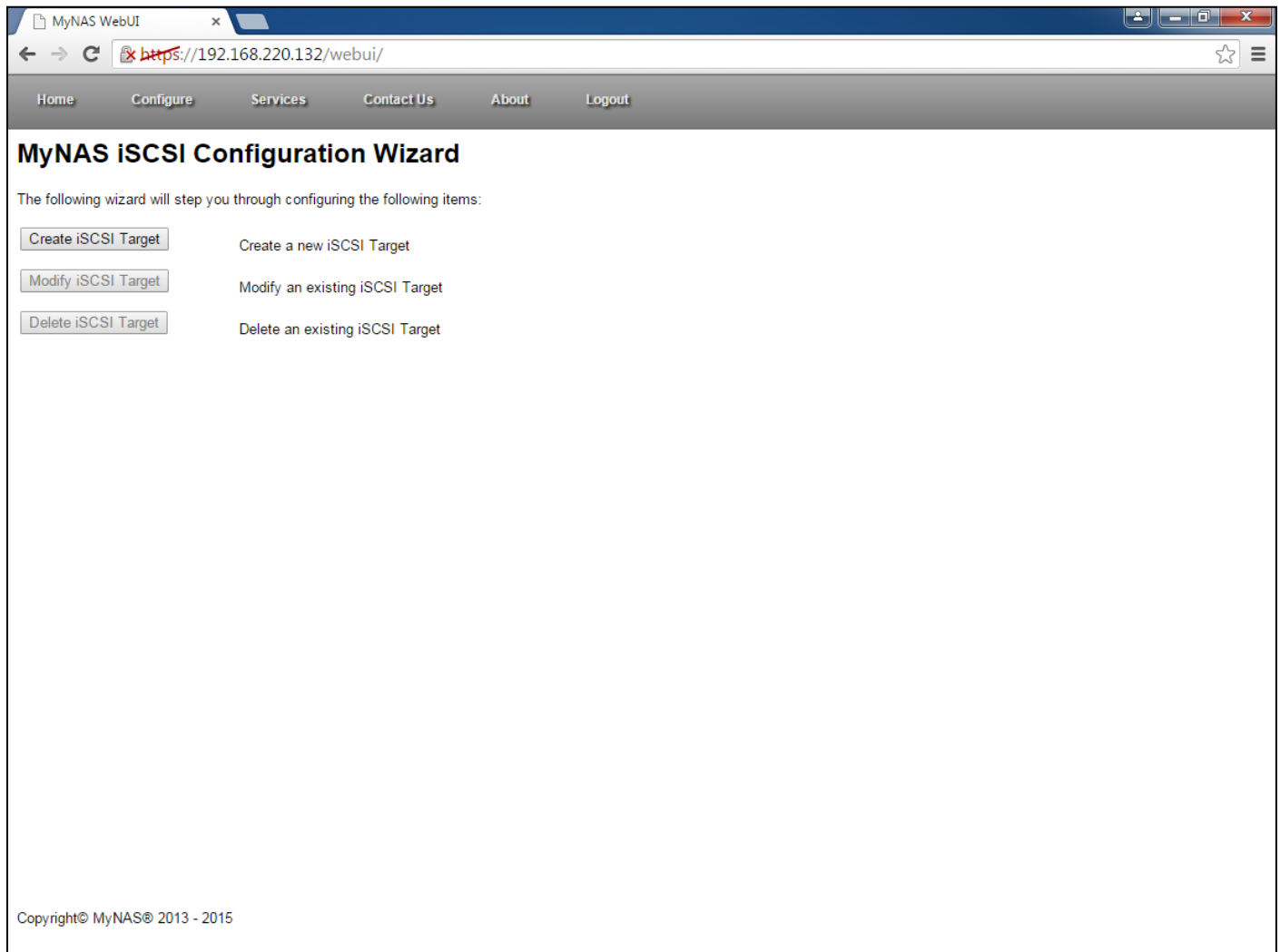
Note: Creating an iSCSI Target requires MyNAS to be configured to utilise a static IP address. This ensures that any clients connecting to MyNAS for iSCSI services will always access the same service.



Creating an iSCSI Target

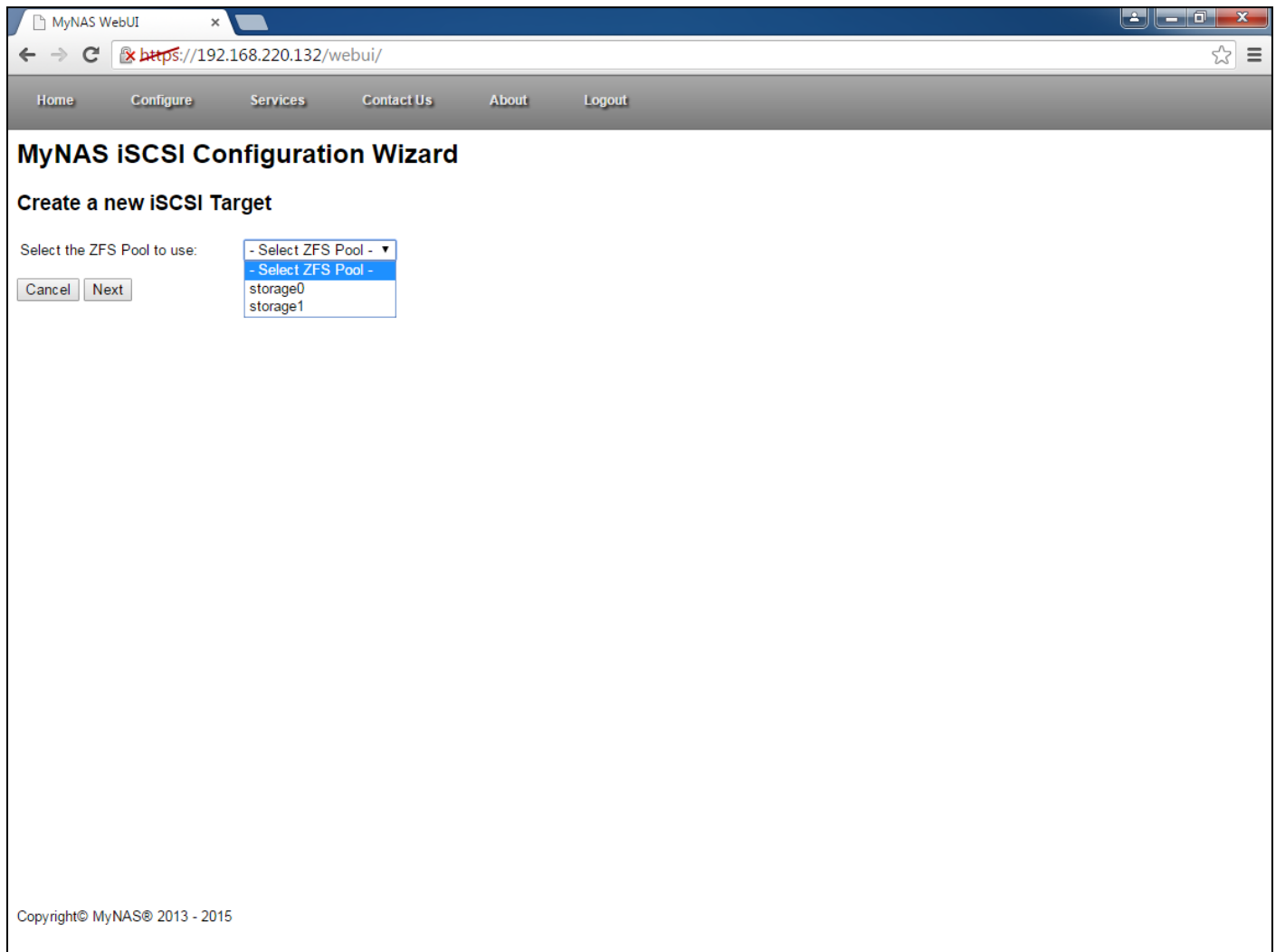
To create an iSCSI target on your MyNAS storage appliance, follow the directions below:

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure iSCSI Targets'. Once selected, the following will be displayed:



To create an iSCSI target, click on the 'Create iSCSI Target' button.

Depending on the ZFS Pool configuration, if there are more than 1 ZFS Pool configured, MyNAS will ask which ZFS Pool should be used for the iSCSI Target creation:



The screenshot shows a web browser window titled "MyNAS WebUI" with the address bar displaying "https://192.168.220.132/webui/". The navigation bar includes links for Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS iSCSI Configuration Wizard" and contains the section "Create a new iSCSI Target". Below this, the text "Select the ZFS Pool to use:" is followed by a dropdown menu. The dropdown menu is open, showing the following options: "- Select ZFS Pool -", "- Select ZFS Pool -", "storage0", and "storage1". To the left of the dropdown menu are "Cancel" and "Next" buttons. At the bottom left of the page, the copyright notice "Copyright© MyNAS® 2013 - 2015" is visible.

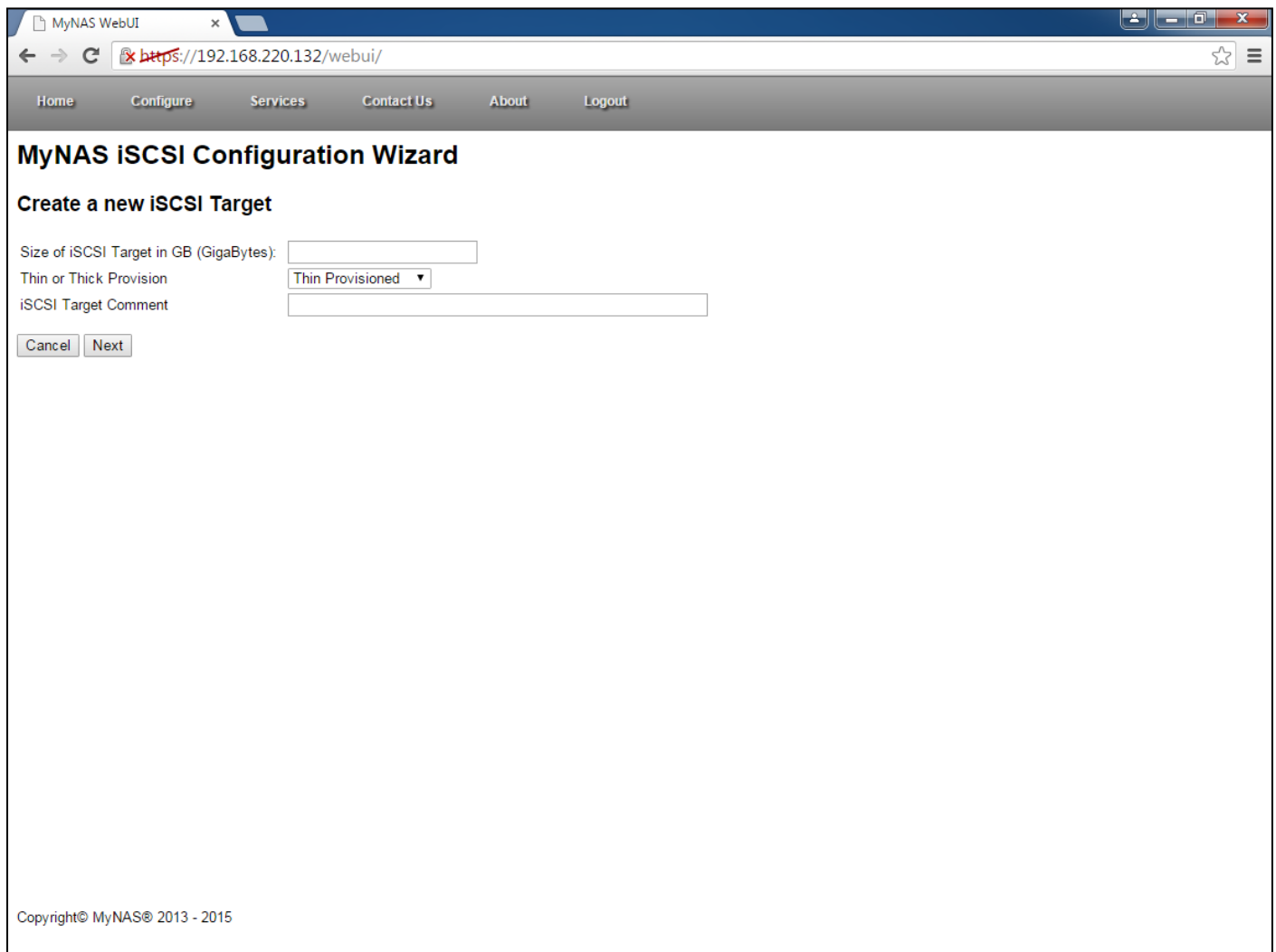
Select the appropriate ZFS Pool and click next

Configure the iSCSI Target with the applicable information:

- Size of the iSCSI Target in GB
- Thin or Thick Provisioned
 - Thin provisioned means to allocate the storage as needed up to the configured size
 - Thick provisioned means to allocate all the storage now
- iSCSI Target comment - useful for identifying what iSCSI target is used for what purpose later on

Thin provisioning makes better use of the underlying storage for all other operations, whilst thick provisioning will lock out that entire space for that iSCSI target - meaning if you do not use all that space on the guest side of the iSCSI Target, it is wasted space.

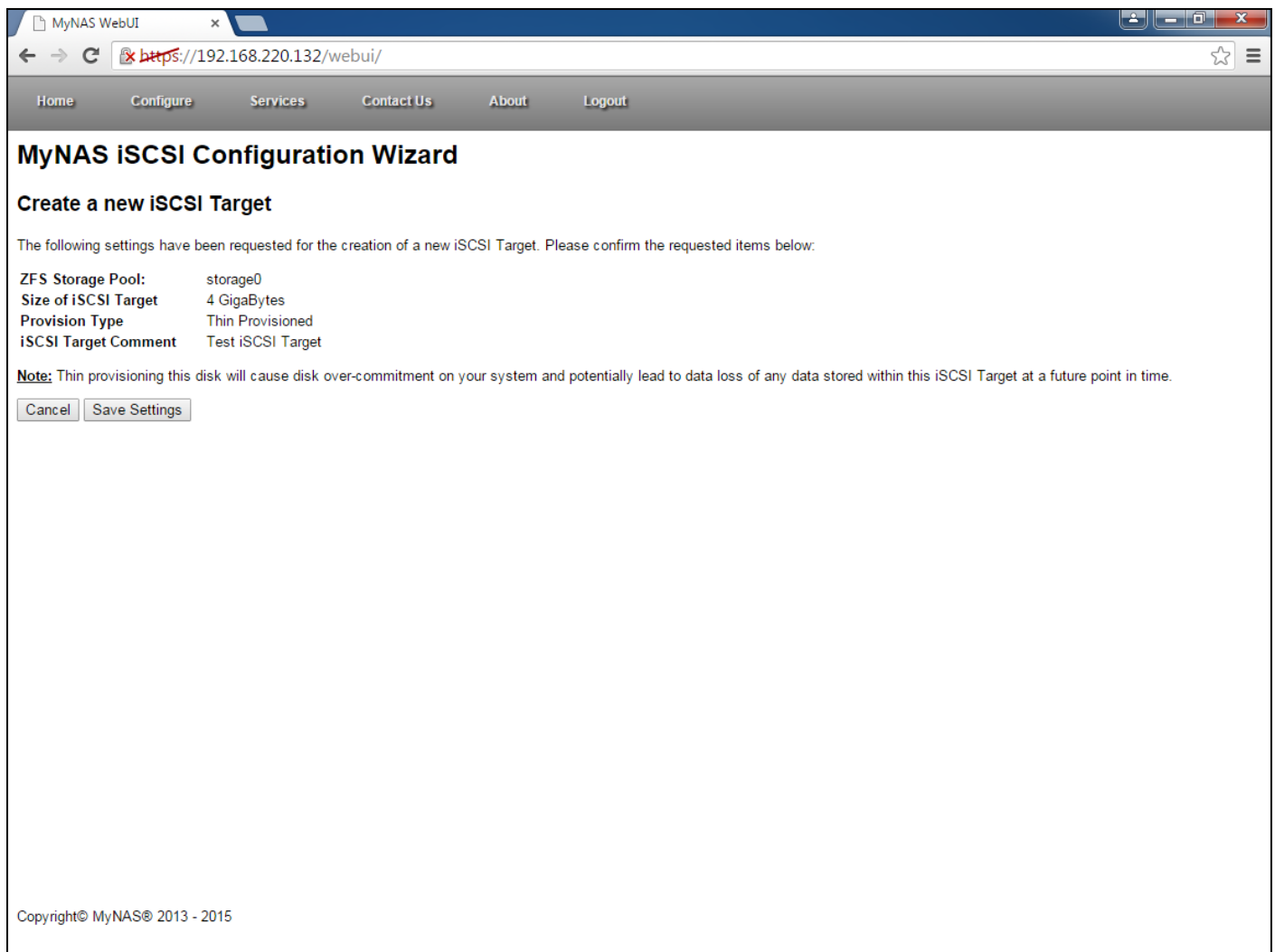
Performance wise, there is negligible measurable performance difference between thin and thick provisioning.



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS iSCSI Configuration Wizard" and contains the section "Create a new iSCSI Target". Below this section, there are three input fields: "Size of iSCSI Target in GB (GigaBytes):" with a text input box, "Thin or Thick Provision" with a dropdown menu showing "Thin Provisioned", and "iSCSI Target Comment" with a text input box. At the bottom of the form are two buttons: "Cancel" and "Next". The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Once all items are configured, click Next to continue

Confirm that these are the settings you wish to use



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS iSCSI Configuration Wizard" and contains the following text:

Create a new iSCSI Target

The following settings have been requested for the creation of a new iSCSI Target. Please confirm the requested items below:

ZFS Storage Pool:	storage0
Size of iSCSI Target	4 GigaBytes
Provision Type	Thin Provisioned
iSCSI Target Comment	Test iSCSI Target

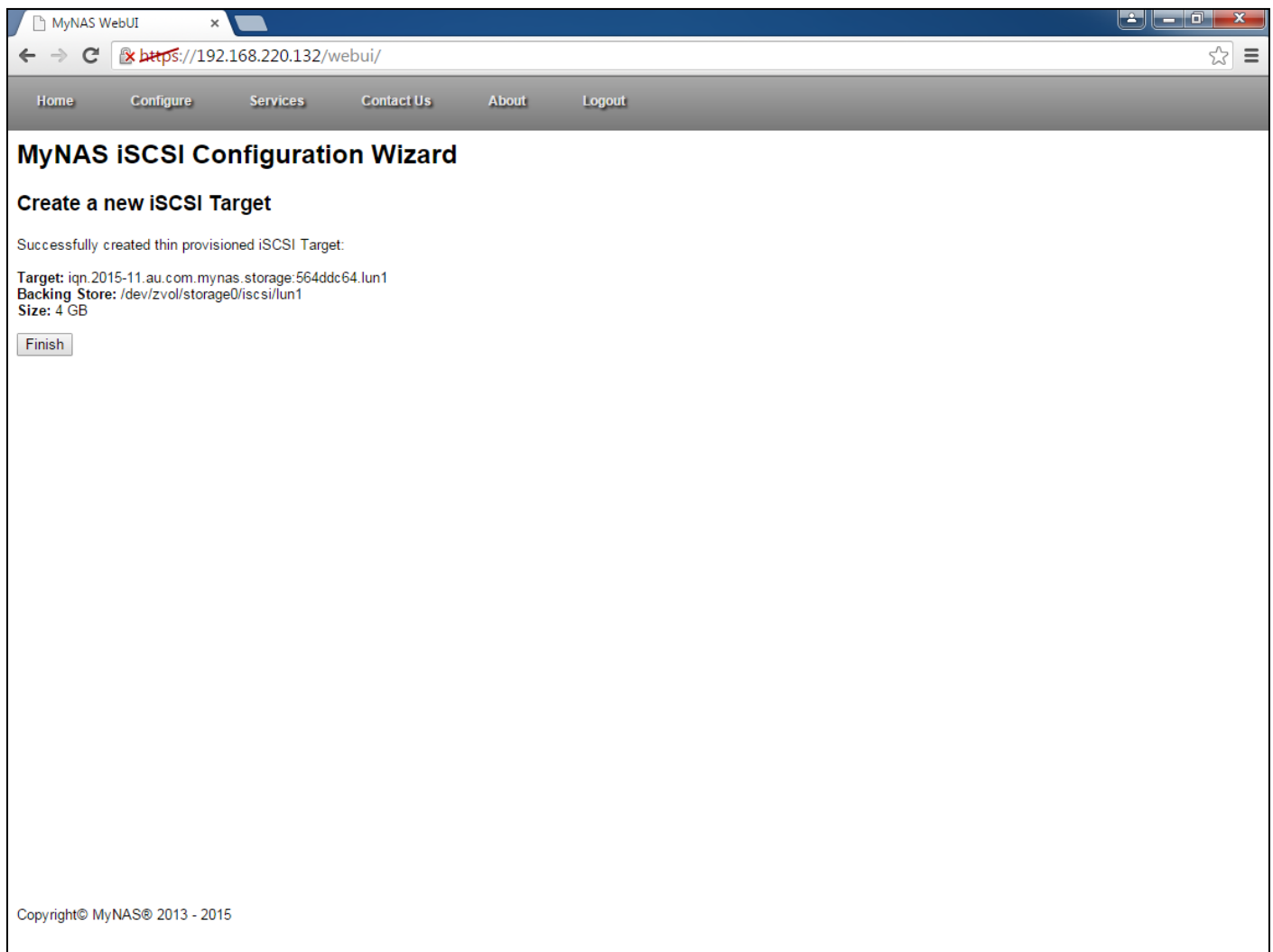
Note: Thin provisioning this disk will cause disk over-commitment on your system and potentially lead to data loss of any data stored within this iSCSI Target at a future point in time.

At the bottom of the form, there are two buttons: "Cancel" and "Save Settings".

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Click 'Save Settings' to confirm and provision the new iSCSI Target

Once the iSCSI Target is created, click 'Finish' to complete the task.



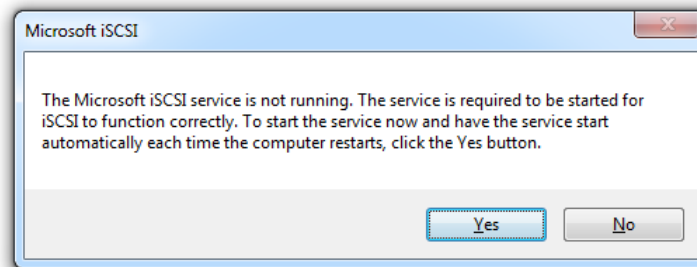
The new iSCSI Target will now be available for use on Windows, Linux, Apple or VMware.

Access a MyNAS iSCSI Target from a Windows 7 / Windows 2008 R2 system

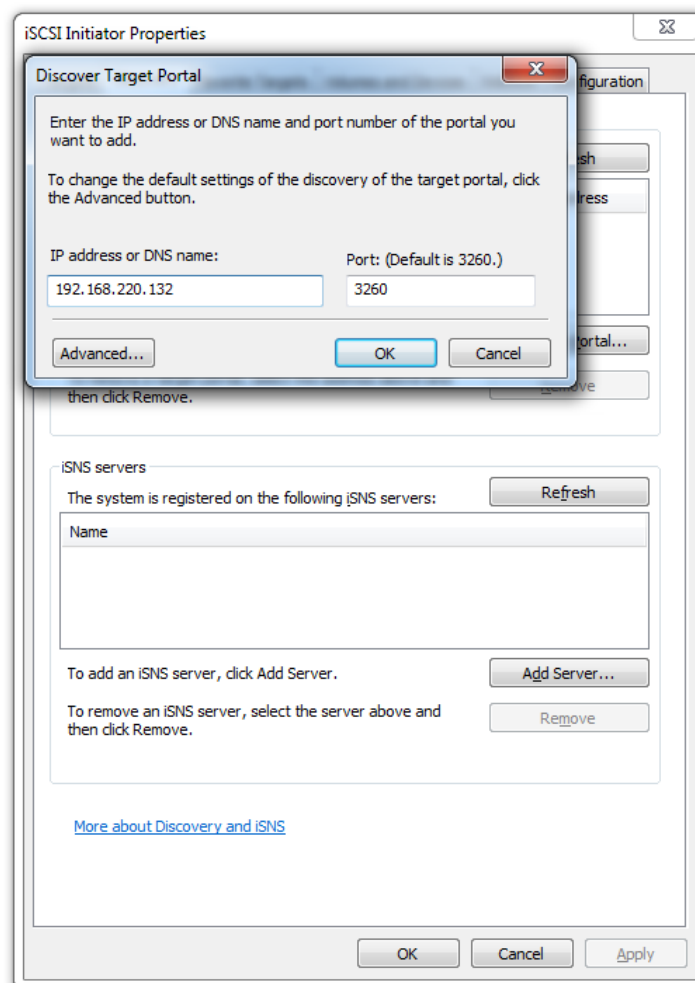
Once an iSCSI Target is created, Windows 7 provides an integrated iSCSI Initiator to access iSCSI Targets. Follow the steps below to configure the iSCSI Target using the Microsoft iSCSI Initiator.

Note: An iSCSI target can be accessed from many clients, however the requirement to format the iSCSI target will only be required for the first use / access of that particular iSCSI target.

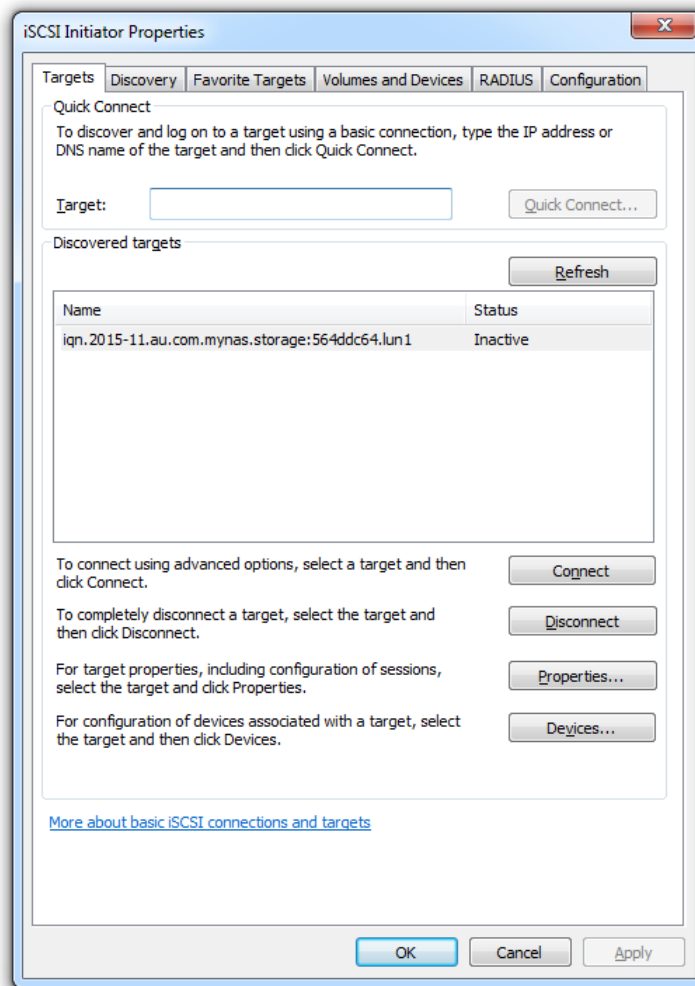
1. From Windows 7, go to: Control Panel → Administrative Tools → iSCSI Initiator. The first time the iSCSI Initiator is run, it will prompt to start the service as illustrated below. Click 'yes' to start the service.



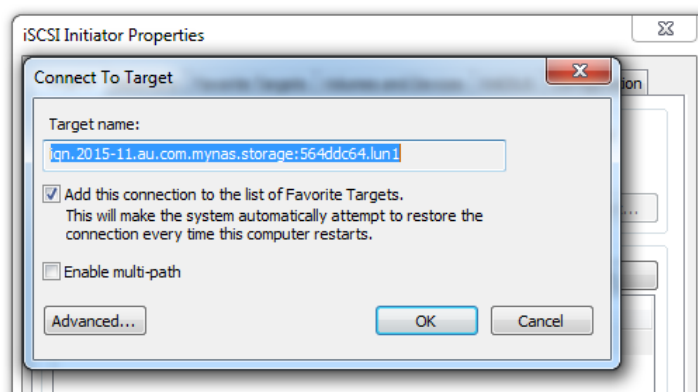
2. Under the Discovery Tab, click on the Discover Portal button and enter in the IP address of the MyNAS storage appliance. Click OK when complete.



- Click on the Targets Tab and click Refresh. The configured iSCSI Targets on the MyNAS storage appliance will be displayed as per below:

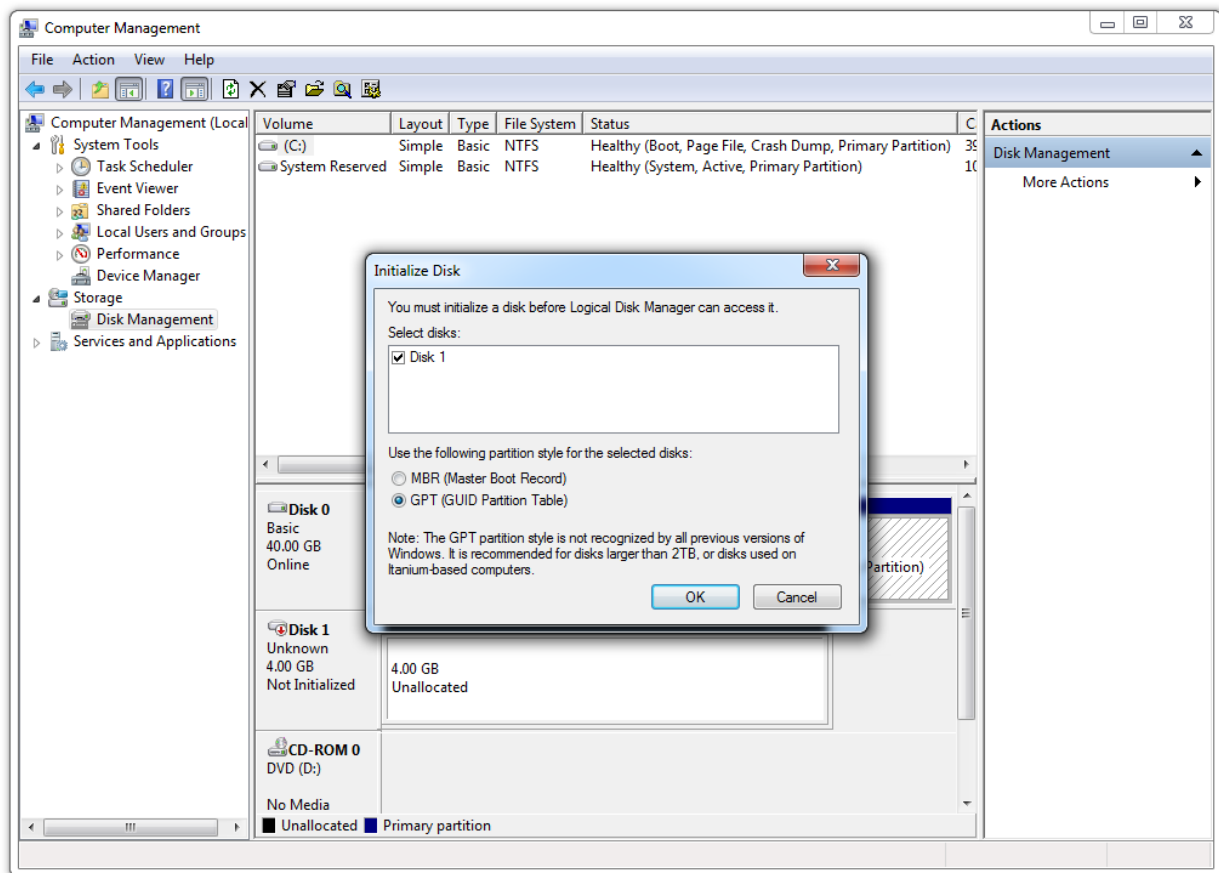


- To connect to one of the configured iSCSI target, click on the Target and then Connect, then OK. Click OK again to close the iSCSI Initiator Properties.



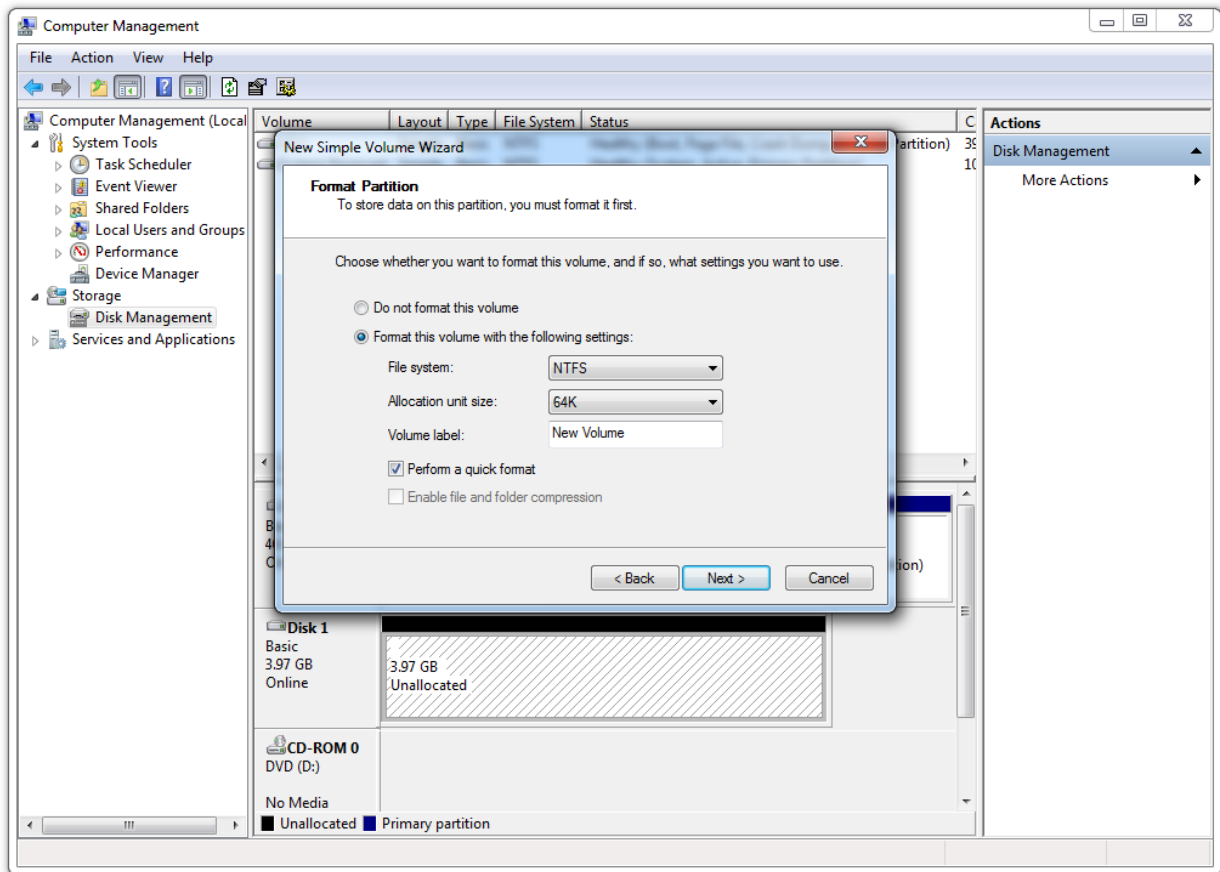
- To use the disk under Windows, if it has not been used before, it first needs to be formatted. This only needs to be done once for each new iSCSI Target.

Go to: Control Panel → Administrative Tools → Computer Management, then click on Disk Management. A popup should appear asking to Initialise the disk as per below:

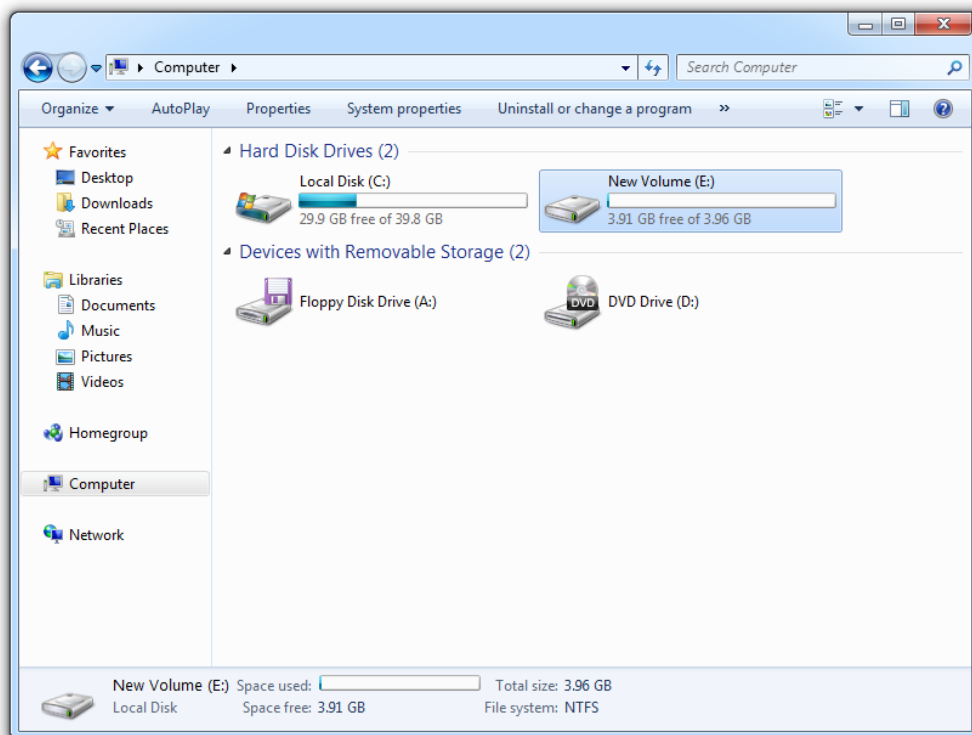


Select GTP for best operation, and click OK.

6. Right click on the new disk and select "New Simple Volume" and follow the prompts. When formatting the partition, change the "Allocation unit size" to 64K as illustrated below:



7. Once the formatting of the iSCSI Target is complete, under "My Computer", the iSCSI disk will now be part of your system with an allocated drive letter. It now can be used to store any of your data on the iSCSI Target.

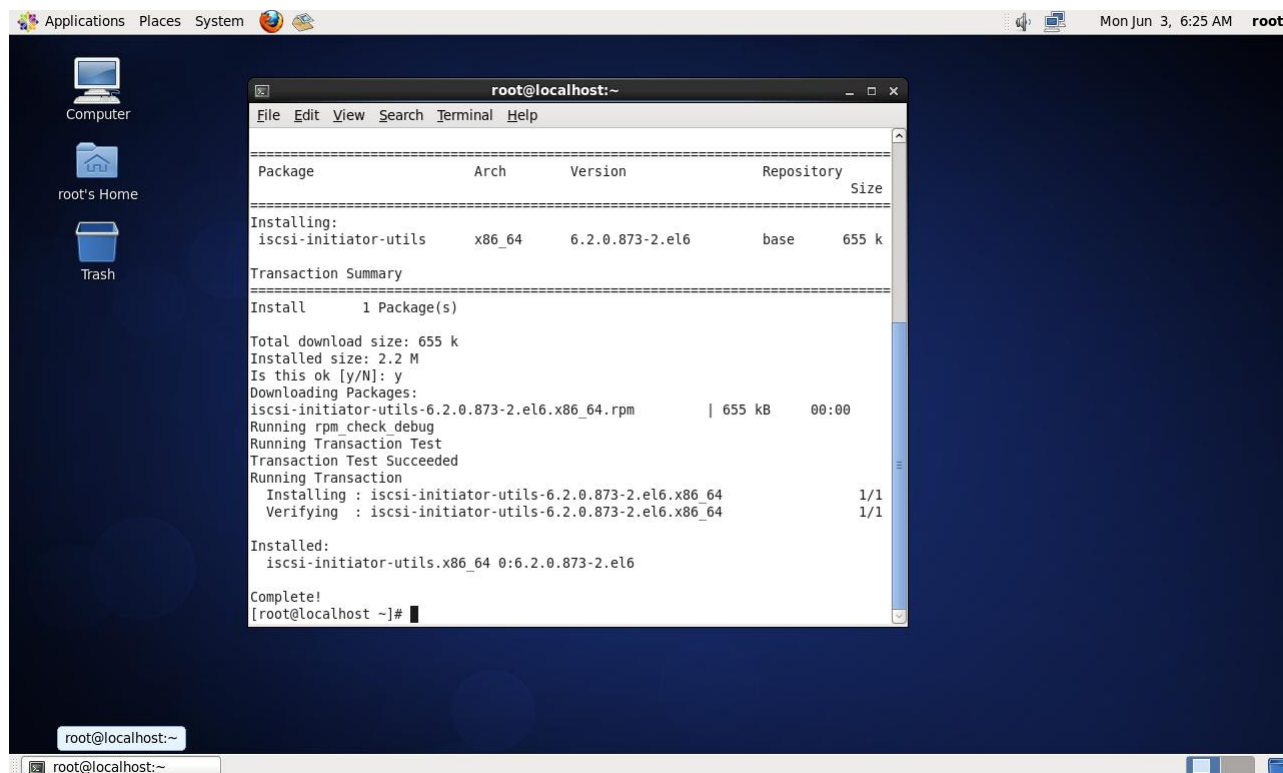


For further details regarding the Microsoft Windows iSCSI Initiator, refer to the Microsoft iSCSI Initiator Step-by-Step Guide at [http://technet.microsoft.com/en-us/library/ee338476\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/ee338476(v=ws.10).aspx)

Access a MyNAS iSCSI Target from a Linux (RHEL / CentOS / Scientific Linux) system

Follow the steps below for configuring a RHEL / CentOS / Scientific Linux system to access a MyNAS iSCSI Target and utilise it as additional storage:

1. Login to the Linux system with root privileges, or if you have sudo, utilise your existing user account to run the following command "yum install iscsi-initiator-utils" as illustrated below:

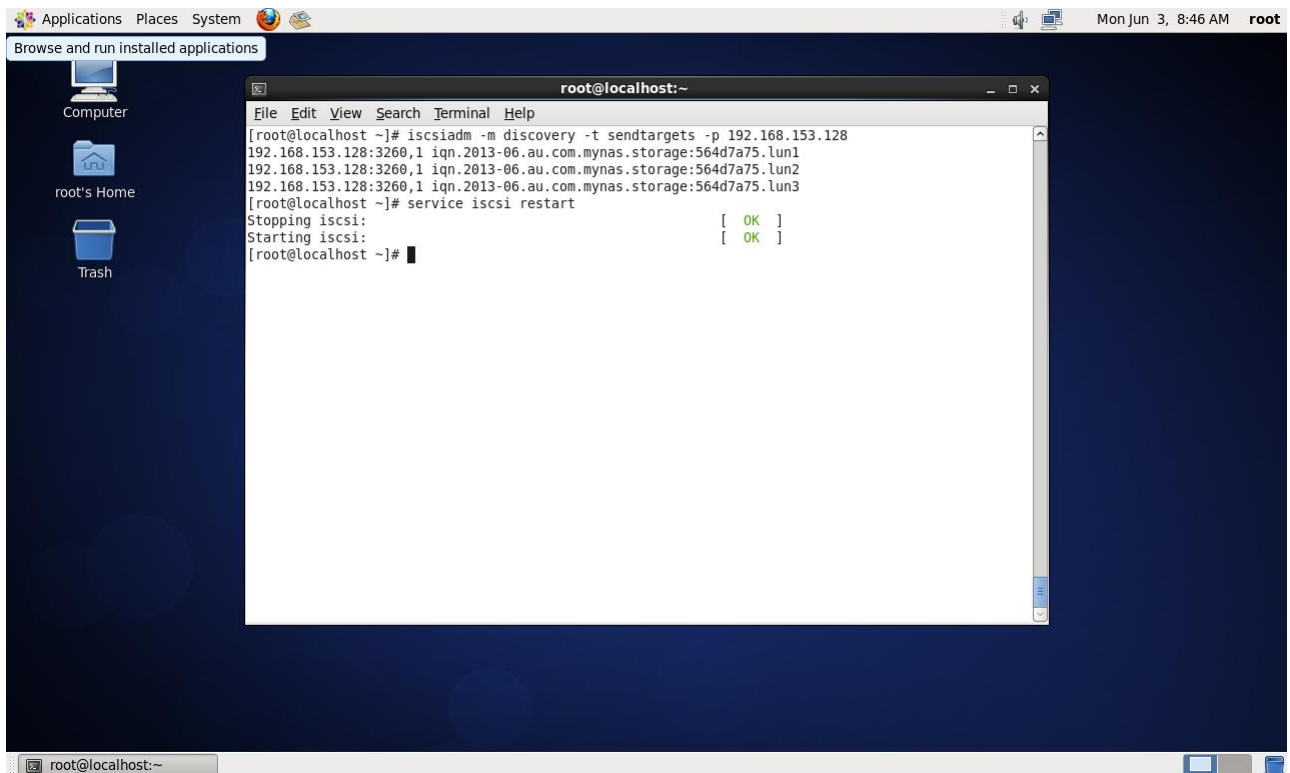


2. From the CLI, configure the iSCSI Initiator Software to discover the available iSCSI Target's on the MyNAS Storage Appliance where:

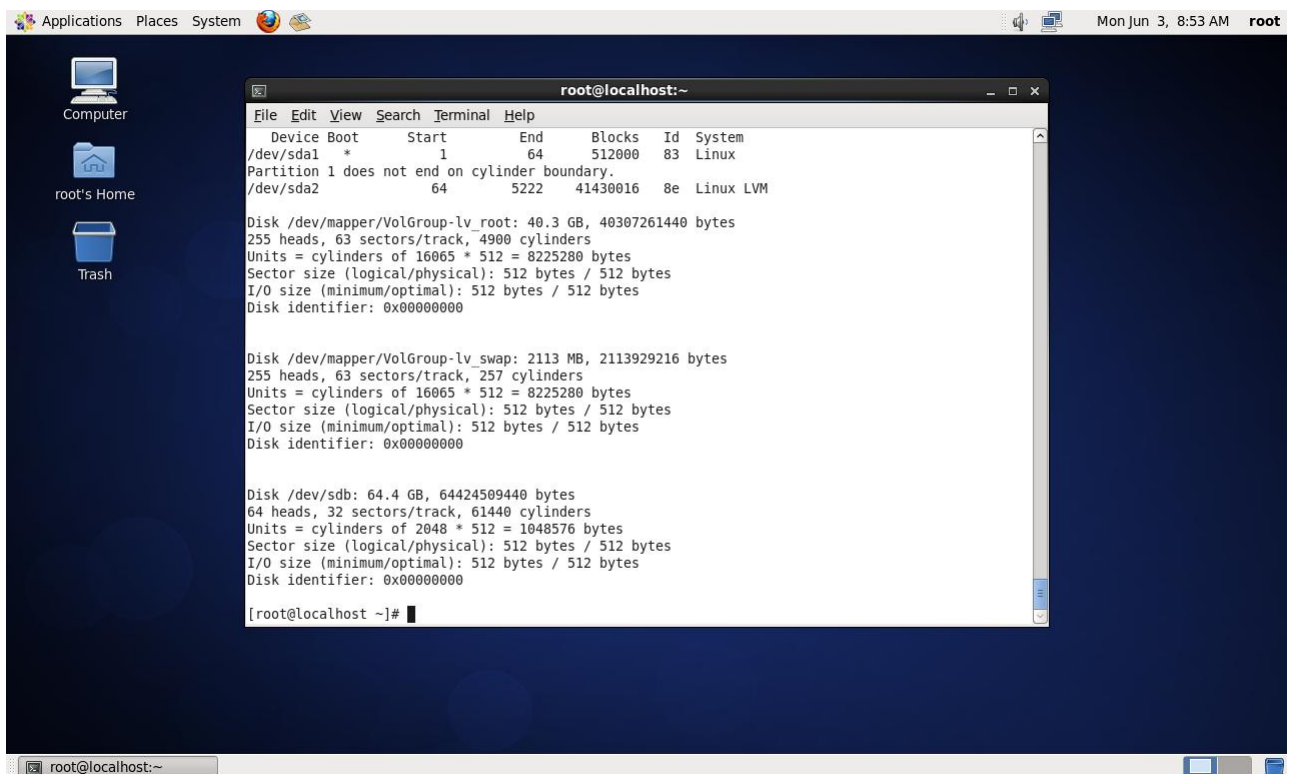
```
iscsiadm -m discovery -t sendtargets -p <ip-address-of-mynas>
```

Once the targets are sent, restart the iSCSI Service:

```
service iscsi restart
```



- From the CLI, obtain the output of command "`fdisk -l`" to see what device name the iSCSI Target was provided. In the example above, the iSCSI Target was given the device name `/dev/sdb` as illustrated below:



- Before this iSCSI target can be used, it needs to have a partition created, and formatted. Follow the directions below to create a partition and format the iSCSI Target:

```
[root@localhost ~]# fdisk /dev/sdb
Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel
Building a new DOS disklabel with disk identifier 0xcf256d52.
Changes will remain in memory only, until you decide to write them.
After that, of course, the previous content won't be recoverable.

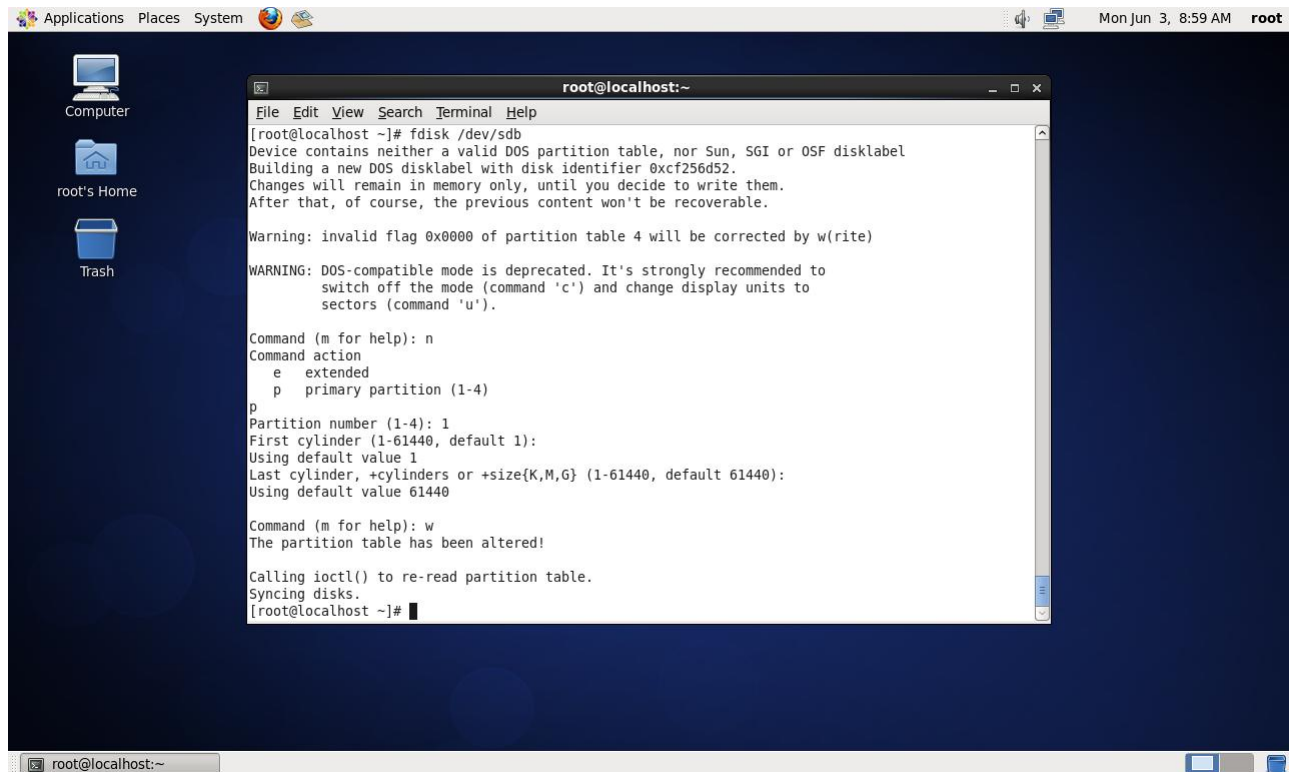
Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to
        switch off the mode (command 'c') and change display units to
        sectors (command 'u').

Command (m for help): n
Command action
    e   extended
    p   primary partition (1-4)
p
Partition number (1-4): 1
First cylinder (1-61440, default 1): <press enter>
Using default value 1
Last cylinder, +cylinders or +size{K,M,G} (1-61440, default 61440): <press enter>
Using default value 61440

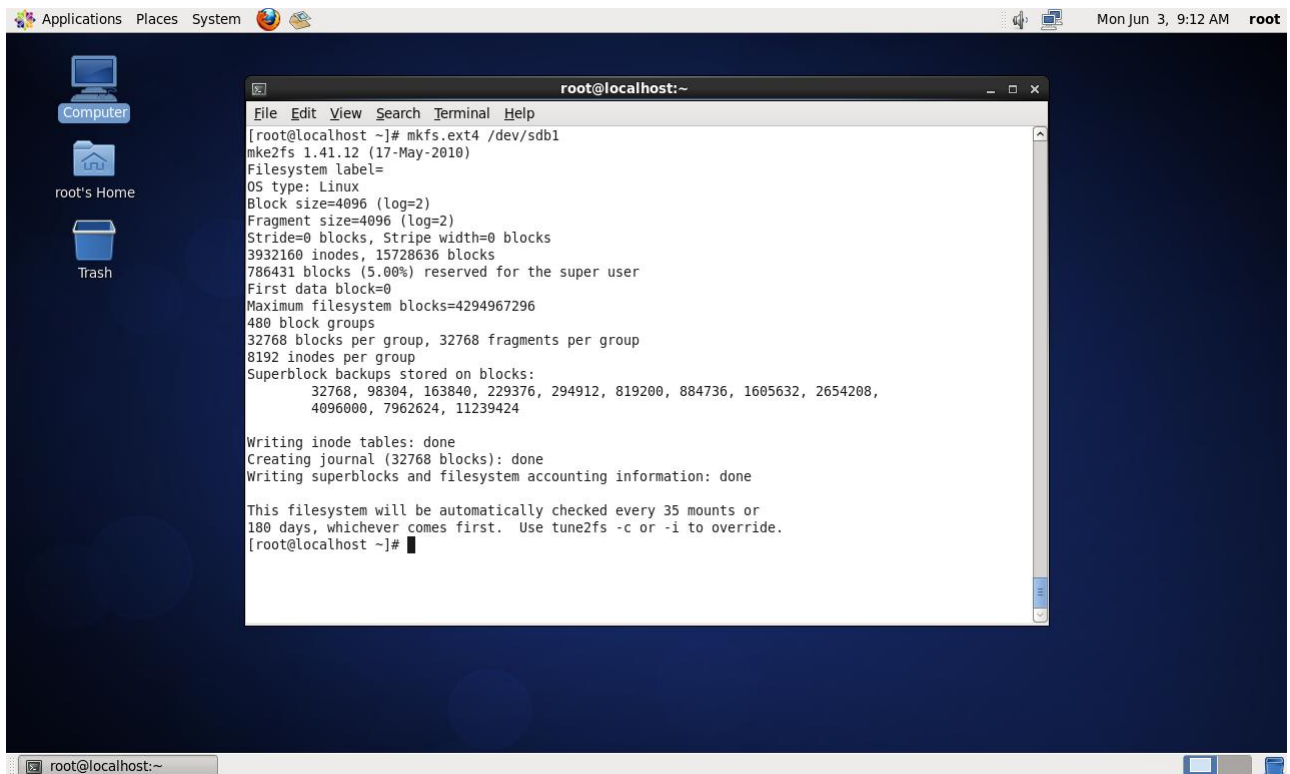
Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
[root@localhost ~]#
```



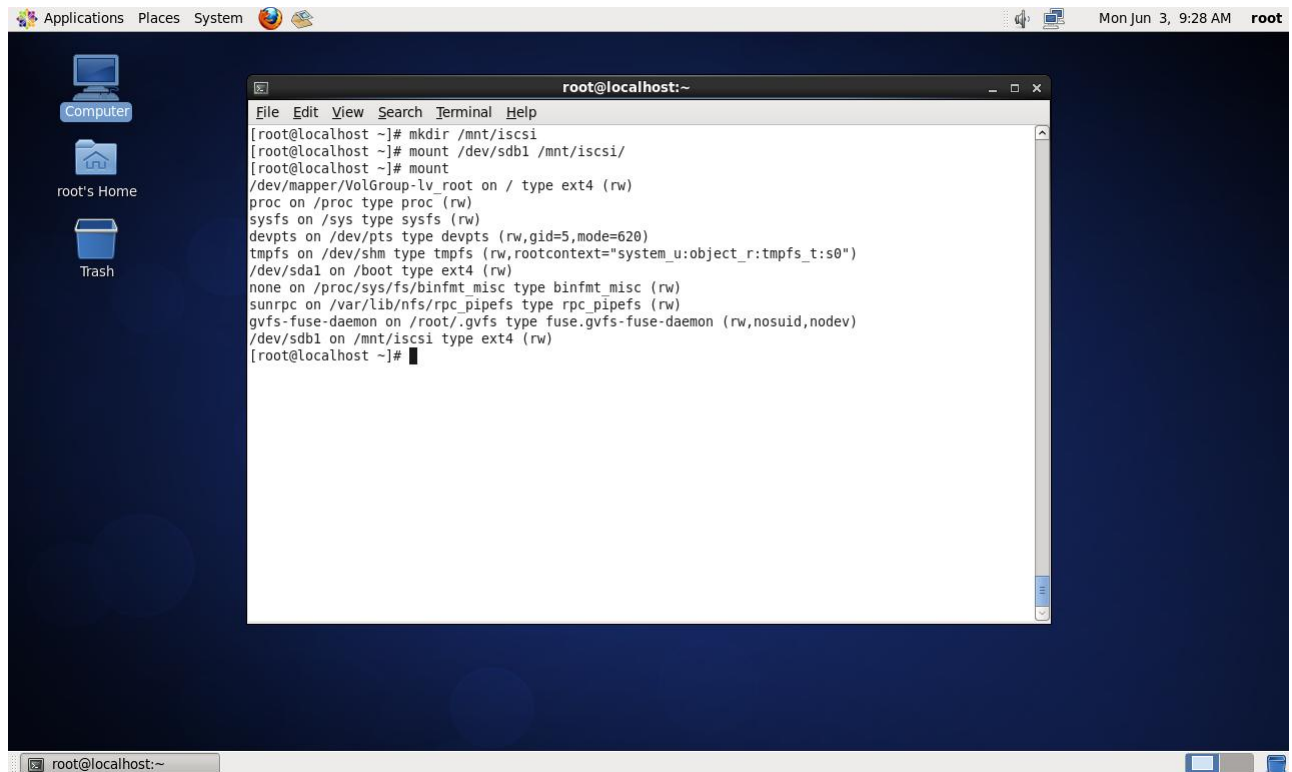
5. Create a usable filesystem on the new partition using the following command:

```
mkfs.ext4 /dev/sdb1
```

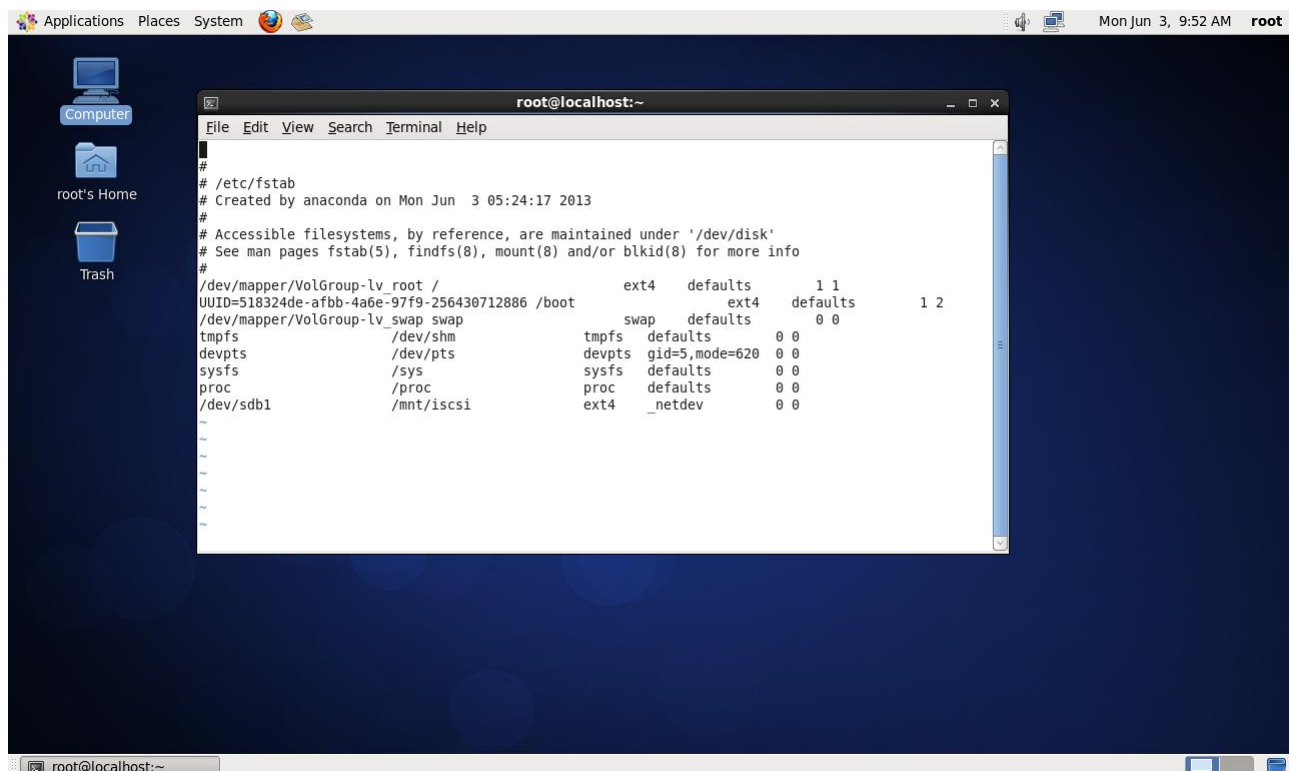


6. Create an applicable mount point for the iSCSI Target on the system, and mount the /dev/sdb1 formatted file system to the mount point:

```
mkdir /mnt/iscsi
mount /dev/sdb1 /mnt/iscsi
```



7. To mount the iSCSI Target automatically on the system when it is rebooted, append to the end of the `/etc/fstab` file following configuration:

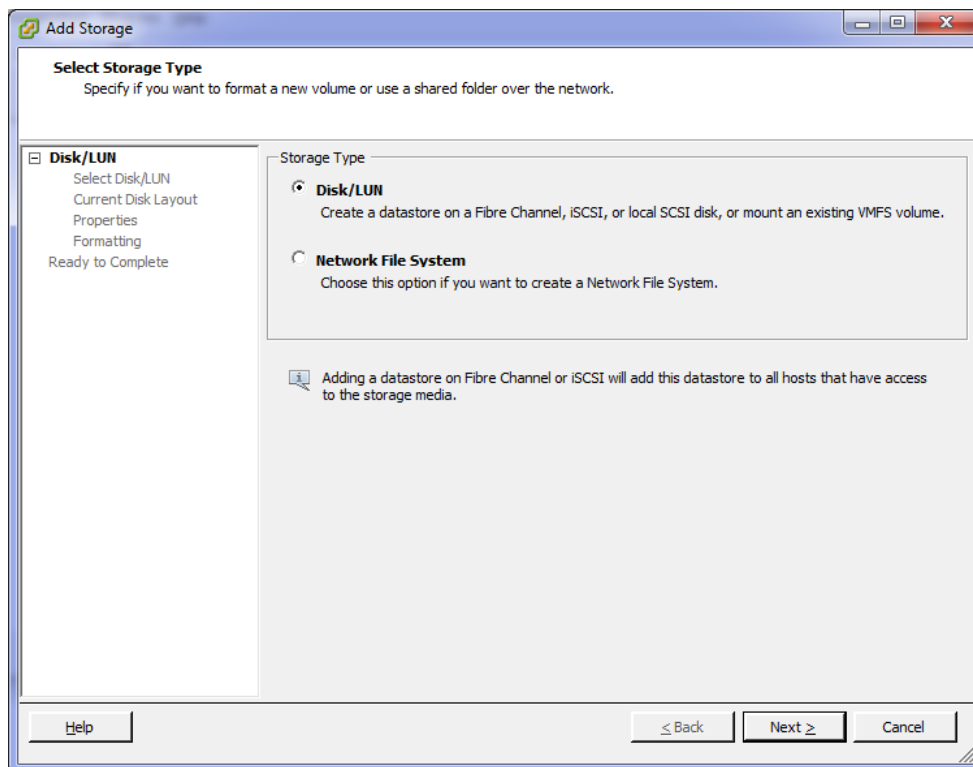


8. After any future reboot of the Linux OS, the iSCSI Target will be automatically mounted. The iSCSI Target can now be used to store data as required.

Access a MyNAS iSCSI Target from VMware ESXi

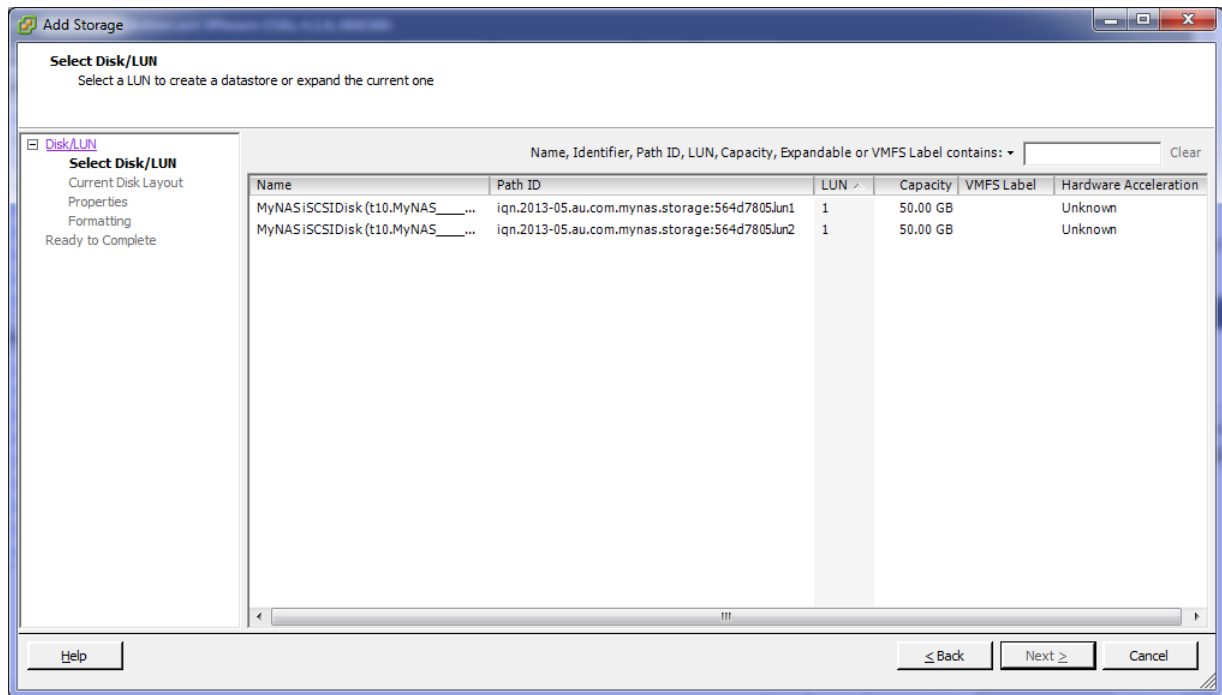
Follow the steps below for configuring VMware ESXi to access a MyNAS iSCSI Target and utilise it as an additional datastore:

1. Open the VMware vSphere client and log into the VMware ESXi server with appropriate privileges which can add a new datastore storage device
2. From the vSphere client, select the top root server, then the Configuration Tab, then Storage Adaptors on the left hand side.
3. Scroll down in the "Storage Adaptors" window until you see the "iSCSI Software Adaptor". Click on this item, and in the Details window below, click Properties.
4. If this is the first time configuring the iSCSI Initiator for VMware ESXi, click the Configure button, and then check the "Enabled" box, then click OK.
5. Click on the "Dynamic Discovery" tab and click "Add". Type in the IP address of the MyNAS storage appliance and click OK. Once completed, click close.
6. A prompt will appear to rescan the host bus adaptor. Click yes.
7. From the vSphere client, select the top root server, then the Configuration Tab, then Storage on the left hand side.
8. Above the Datastores view, click the "Add Storage..." text to add additional storage to this ESXi host. A storage configuration wizard will appear as per below:



Select Disk/LUN and click Next.

9. The wizard will now display the available iSCSI Targets for ESXi to use as illustrated below:



10. Select the appropriate iSCSI Target to use for the ESXi VMFS Datastore and click Next.
11. As this is a new iSCSI Target, it will be blank and will need to be formatted. Click Next.
12. Give the new datastore a name, and click Next.
13. Select the appropriate maximum file size. Refer to VMware ESXi documentation as to how to determine the correct size for your use. Once selected, click Next, and then Finish.
14. VMware ESXi will now format the iSCSI Target, and make the datastore available for VMware ESXi to utilise.

Modifying an iSCSI Target

Modifying an iSCSI Target provides two options

1. Extend an iSCSI Target in size
2. Add an additional iSCSI Target to the existing logical unit

In the first case, this is useful when you are running short on space for the iSCSI Target, and need to allocate more space to the system which is utilising that particular iSCSI Target

In the second case, this can be useful if you need additional disks associated with the particular iSCSI Target - for example you wish to create a mirror of data on your file system using iSCSI

Follow the directions below to perform an iSCSI modification.

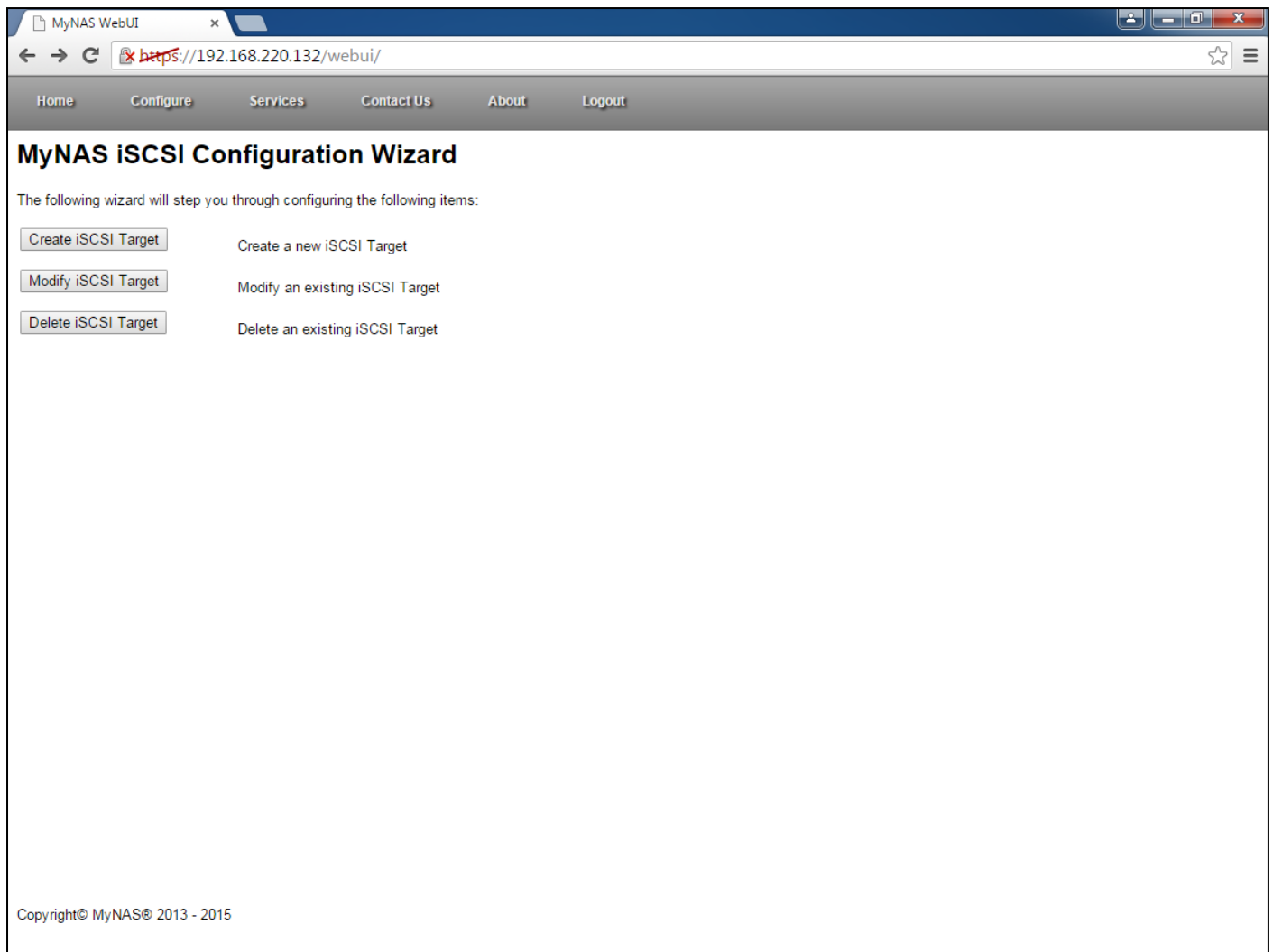
Note: Before modifying an iSCSI Target, the actual target that will be modified will need to be disconnected on the host that is currently using iSCSI Target. If not, a warning similar to below will be presented:

Modify an iSCSI Target
WARNING:
The iSCSI Target selected to be modified appears to be in use. Applicable details below:

- iSCSI Initiator: Initiator: iqn.1991-05.com.microsoft:win7-mynas
- iSCSI Initiator IP Address: 192.168.153.170
- iSCSI Target Comment: Test iSCSI Target

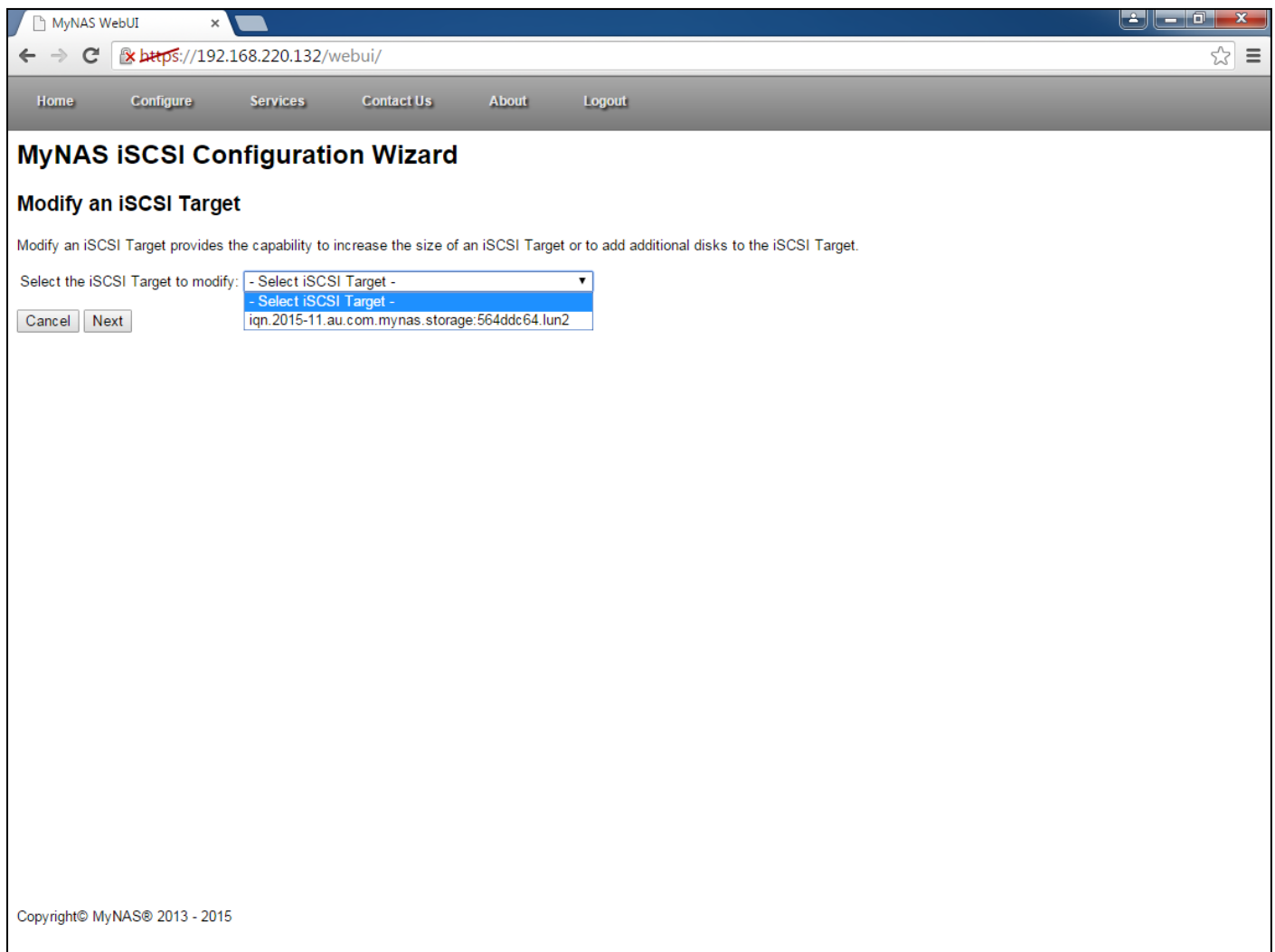
Unable to continue with iSCSI Target modification request. To modify this iSCSI Target, please disconnect the above client.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure iSCSI Targets'. Once selected, the following will be displayed:



Click the 'Modify iSCSI Target' to modify an iSCSI Target

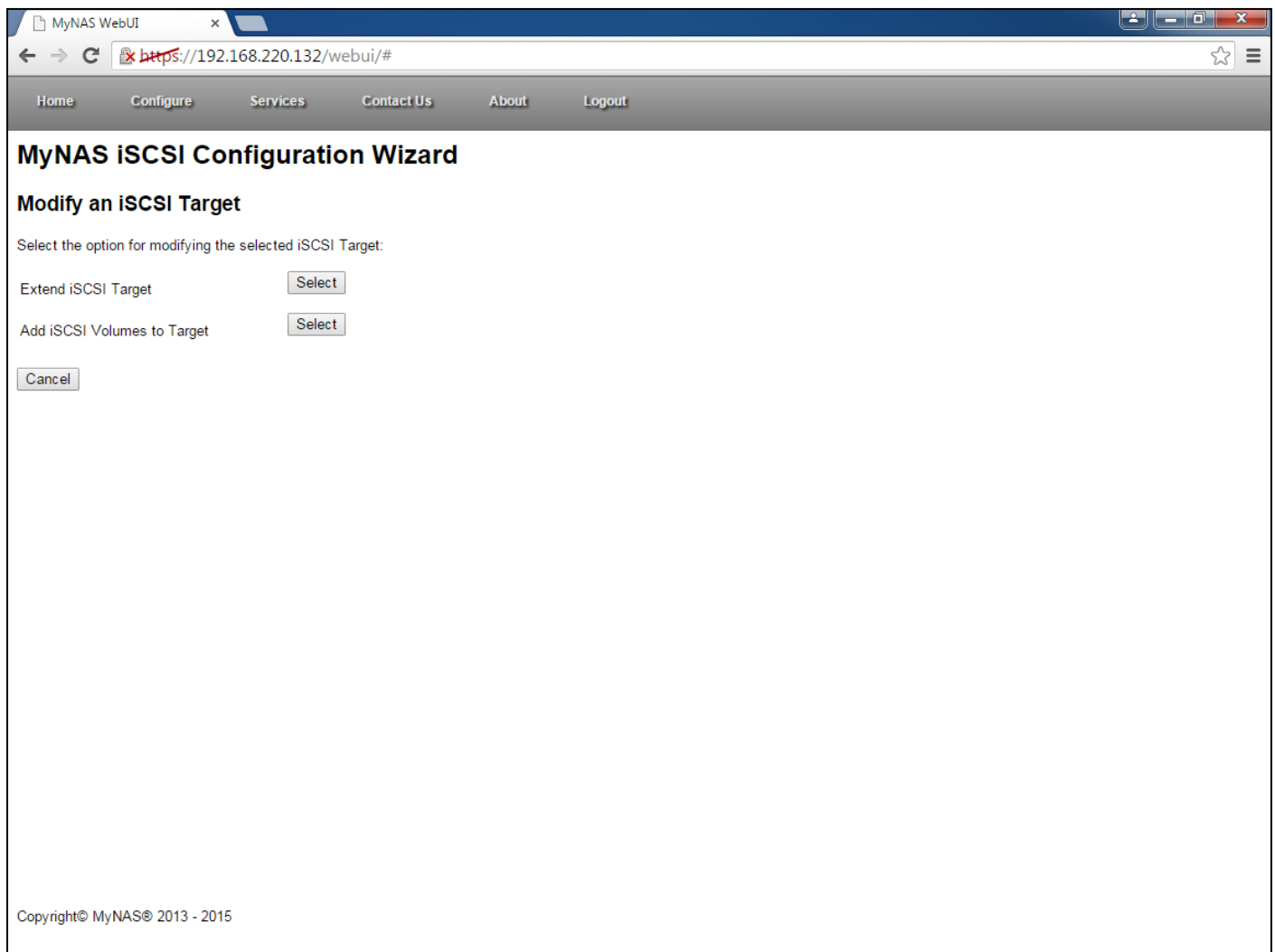
Select the iSCSI target to modify:



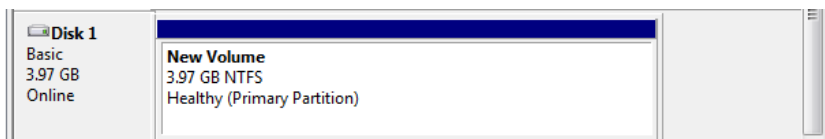
The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS iSCSI Configuration Wizard'. Below this is the section 'Modify an iSCSI Target'. A descriptive text states: 'Modify an iSCSI Target provides the capability to increase the size of an iSCSI Target or to add additional disks to the iSCSI Target.' The form contains a label 'Select the iSCSI Target to modify:' followed by a dropdown menu. The dropdown menu is open, showing three options: '- Select iSCSI Target -' (selected), '- Select iSCSI Target -', and 'iqn.2015-11.au.com.mynas.storage:564ddc64.lun2'. Below the dropdown are 'Cancel' and 'Next' buttons. At the bottom left, the copyright notice 'Copyright© MyNAS® 2013 - 2015' is visible.

Once the iSCSI Target to modify is selected, click 'Next'

Select the type of modification you wish to perform

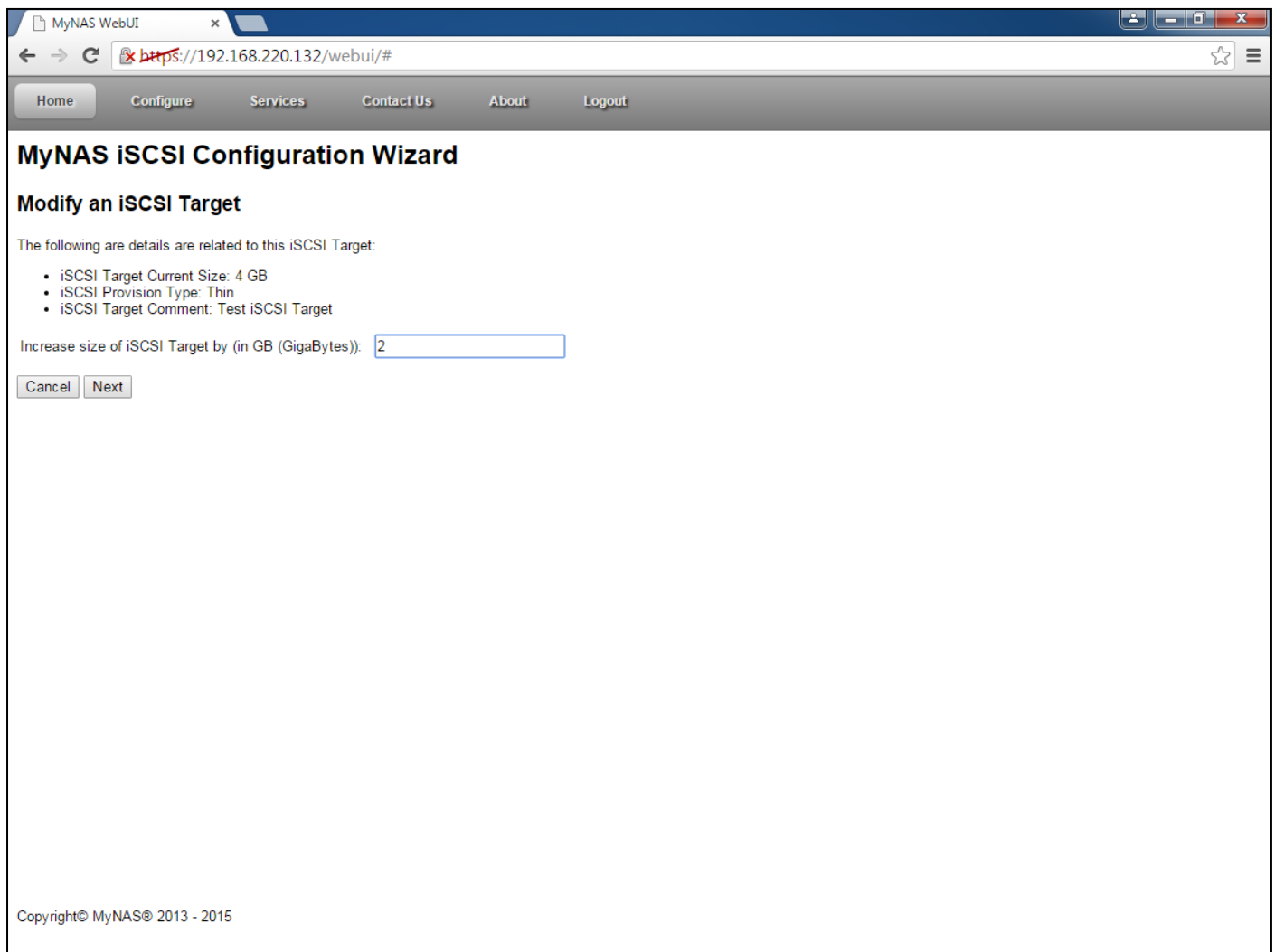


For this exercise, we will extend the existing iSCSI target. The current iSCSI Target is a 4GB sized target, assigned to a Windows system as illustrated below:



From the MyNAS WebUI, click the Select button to Extend the iSCSI Target

Type in the size to increase the iSCSI Target by:



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/#`. The browser tab is labeled "MyNAS WebUI". The navigation menu includes "Home", "Configure", "Services", "Contact Us", "About", and "Logout". The main content area is titled "MyNAS iSCSI Configuration Wizard" and "Modify an iSCSI Target". Below this, it states "The following details are related to this iSCSI Target:" followed by a bulleted list: "iSCSI Target Current Size: 4 GB", "iSCSI Provision Type: Thin", and "iSCSI Target Comment: Test iSCSI Target". A text input field is labeled "Increase size of iSCSI Target by (in GB (GigaBytes)):" with the value "2" entered. Below the input field are "Cancel" and "Next" buttons. At the bottom left, the copyright notice "Copyright© MyNAS® 2013 - 2015" is visible.

MyNAS WebUI

`https://192.168.220.132/webui/#`

Home Configure Services Contact Us About Logout

MyNAS iSCSI Configuration Wizard

Modify an iSCSI Target

The following details are related to this iSCSI Target:

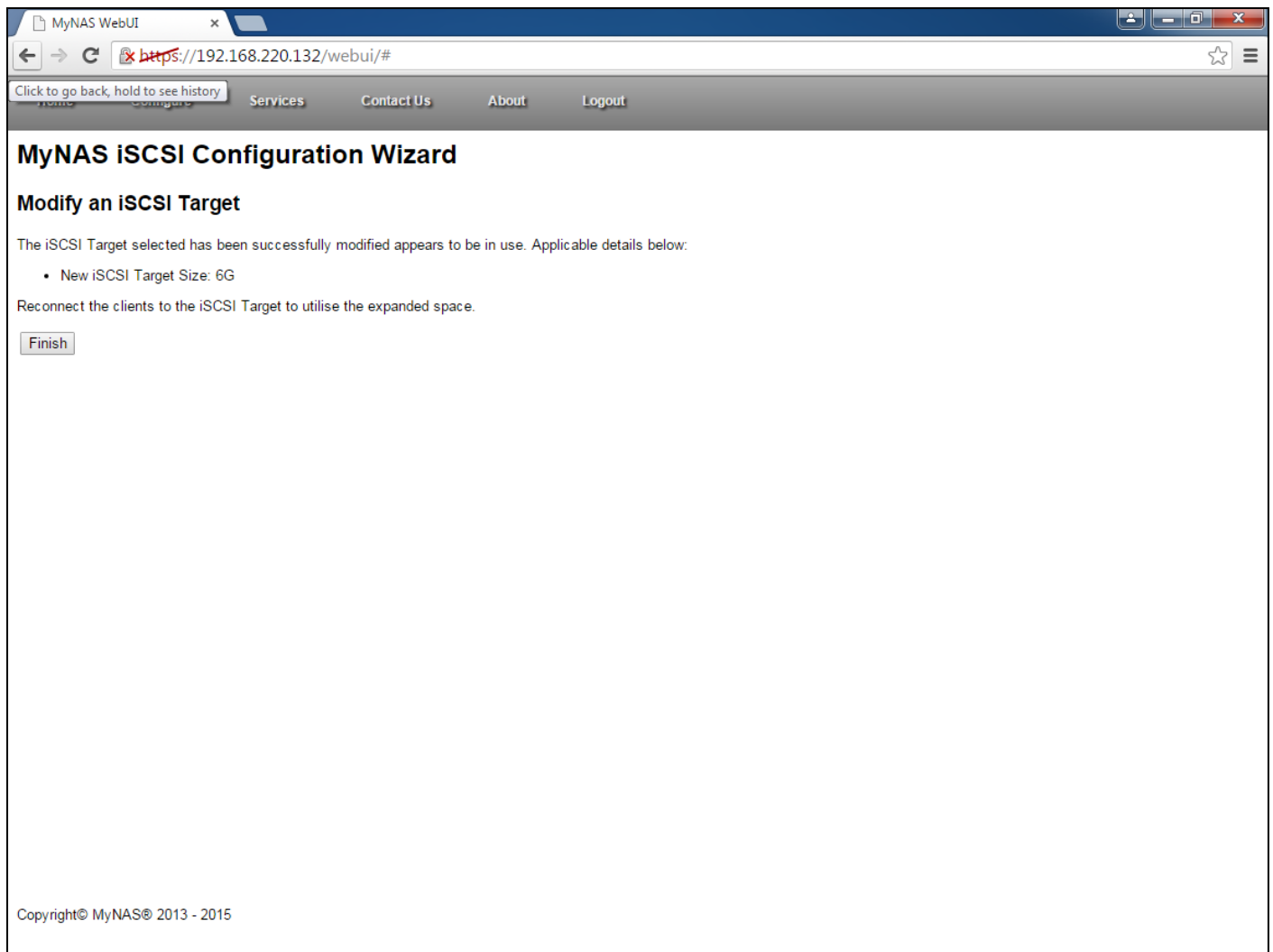
- iSCSI Target Current Size: 4 GB
- iSCSI Provision Type: Thin
- iSCSI Target Comment: Test iSCSI Target

Increase size of iSCSI Target by (in GB (GigaBytes)):

Cancel Next

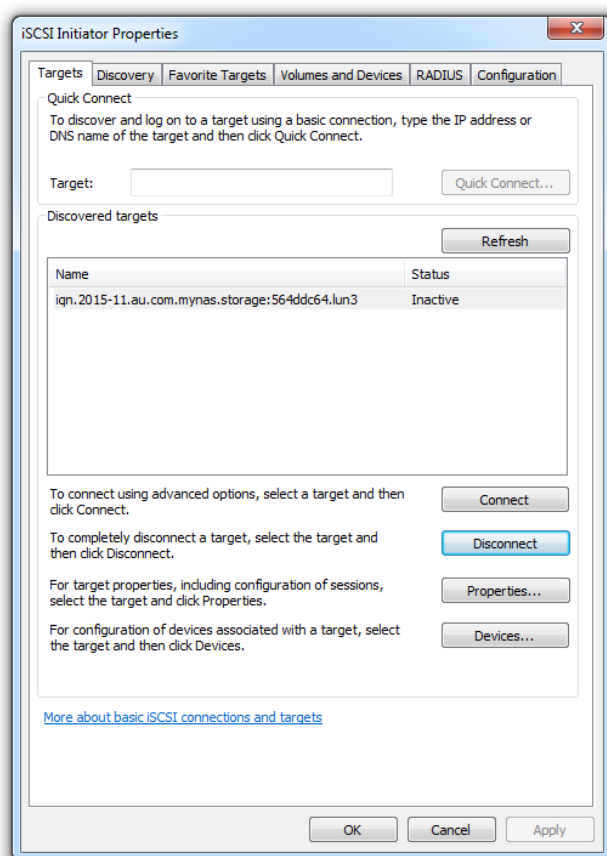
Copyright© MyNAS® 2013 - 2015

Click 'Next' and the iSCSI Target will be increased by the selected GB.



Click 'Finish' to complete the modification task.

In Windows, re-connect the iSCSI Target using the iSCSI Initiator Properties:



Click the 'Connect' button to reconnect to the modified iSCSI Target.

Once reconnected, open up the Computer Management MMC to utilise the additional storage space



Right click on the iSCSI volume, and select to Extend Volume. Follow the wizard prompts to extend the volume to utilise the additional storage provisioned. Once extended, the new total size (6GB) should be usable by the Windows system:



Follow the same approach to perform further increases, or to add additional volumes to the same iSCSI Target.

Delete an iSCSI Target

Deleting an iSCSI Target is a destructive process for your data. Follow the directions below to delete an iSCSI Target.

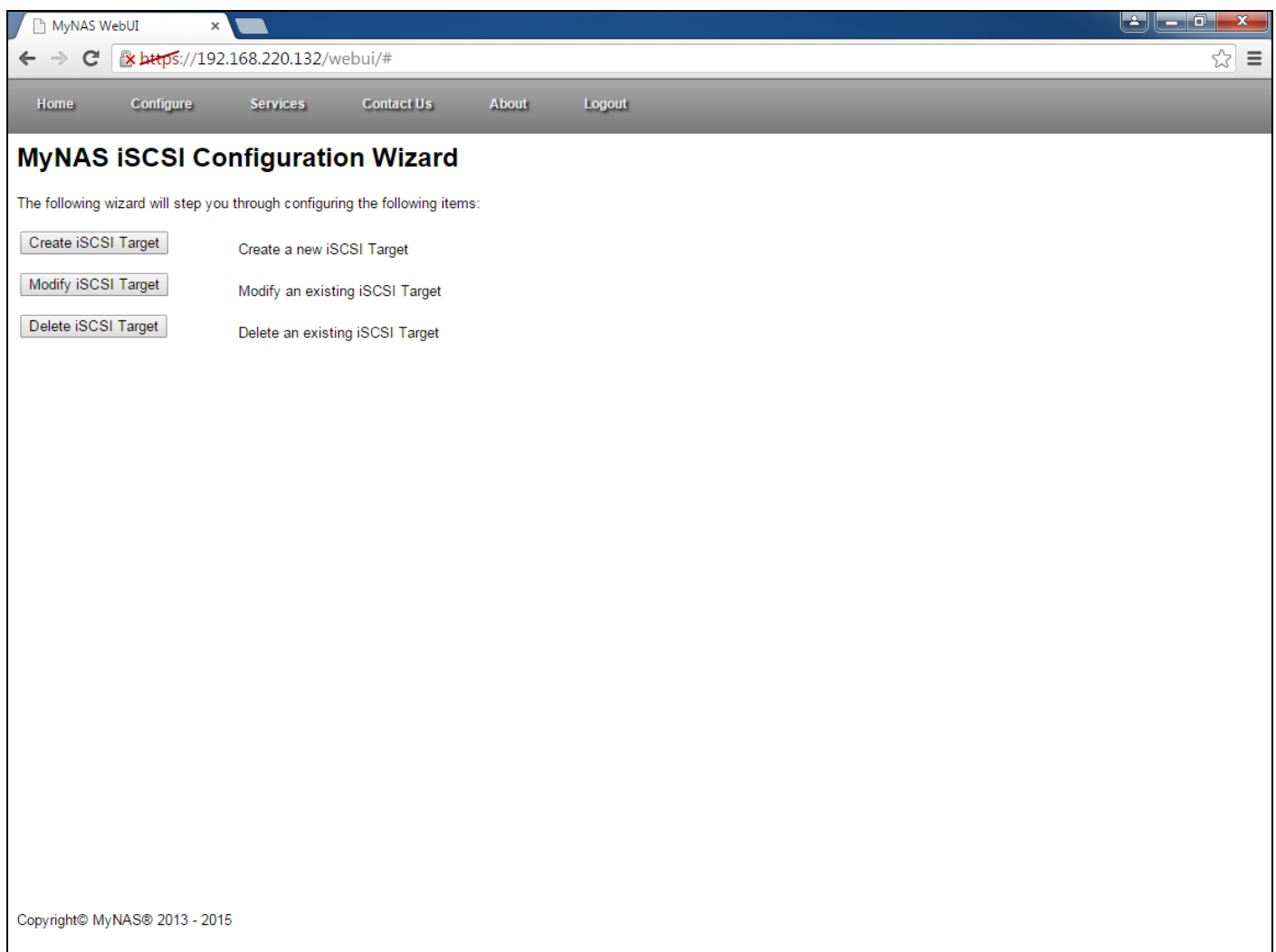
Note: Before deleting an iSCSI Target, the actual target that will be deleted will need to be disconnected on the host that is currently using iSCSI Target. If not, a warning similar to below will be presented:

Delete an iSCSI Target
WARNING:
The iSCSI Target selected to delete appears to be in use. Applicable details below:

- iSCSI Initiator: Initiator: iqn.1991-05.com.microsoft:win7-mynas
- iSCSI Initiator IP Address: 192.168.153.170
- iSCSI Target Comment: Test iSCSI Target

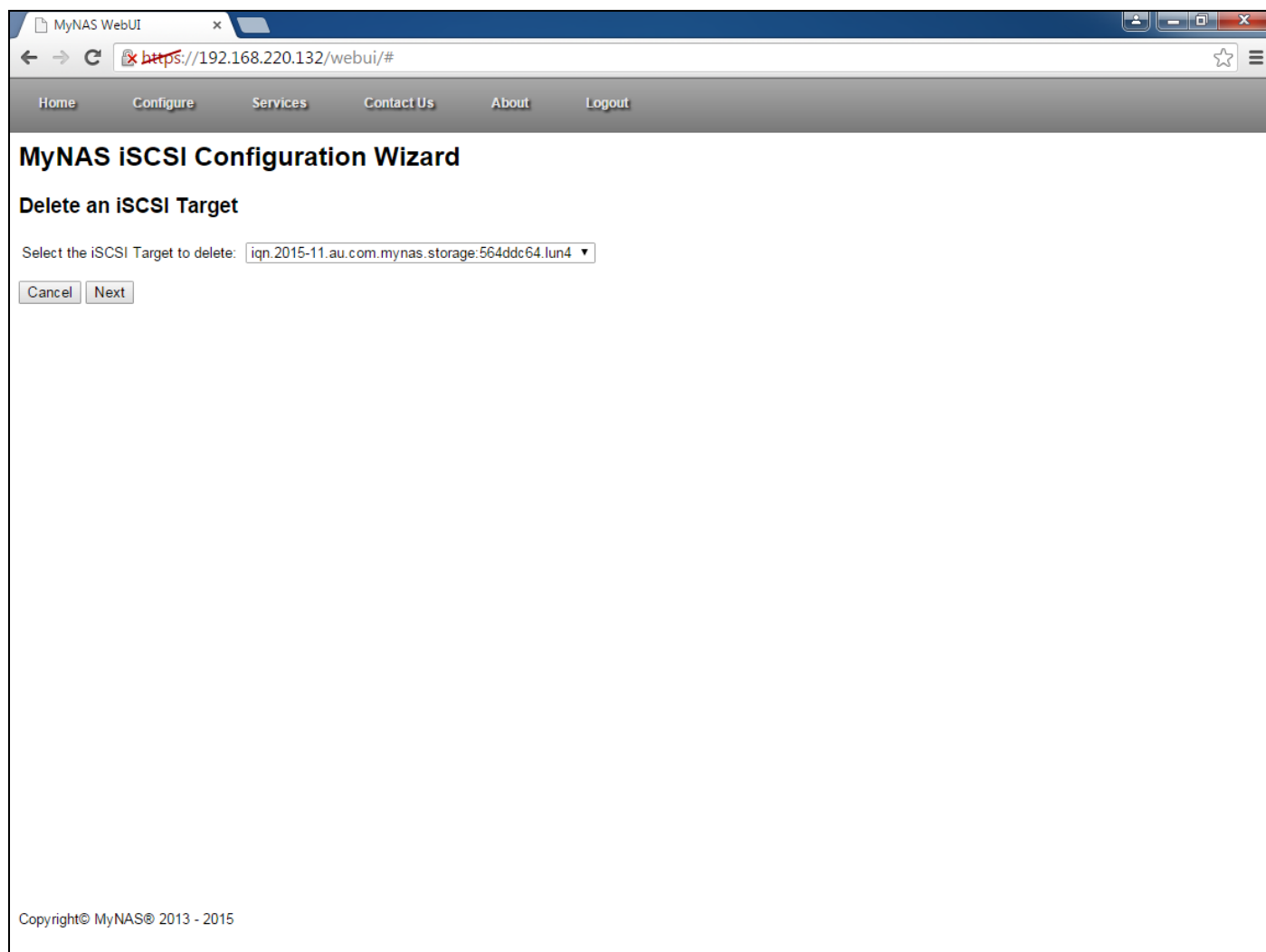
Unable to continue with iSCSI delete request. To remove this iSCSI Target, please disconnect the above client.

Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure iSCSI Targets'. Once selected, the following will be displayed:

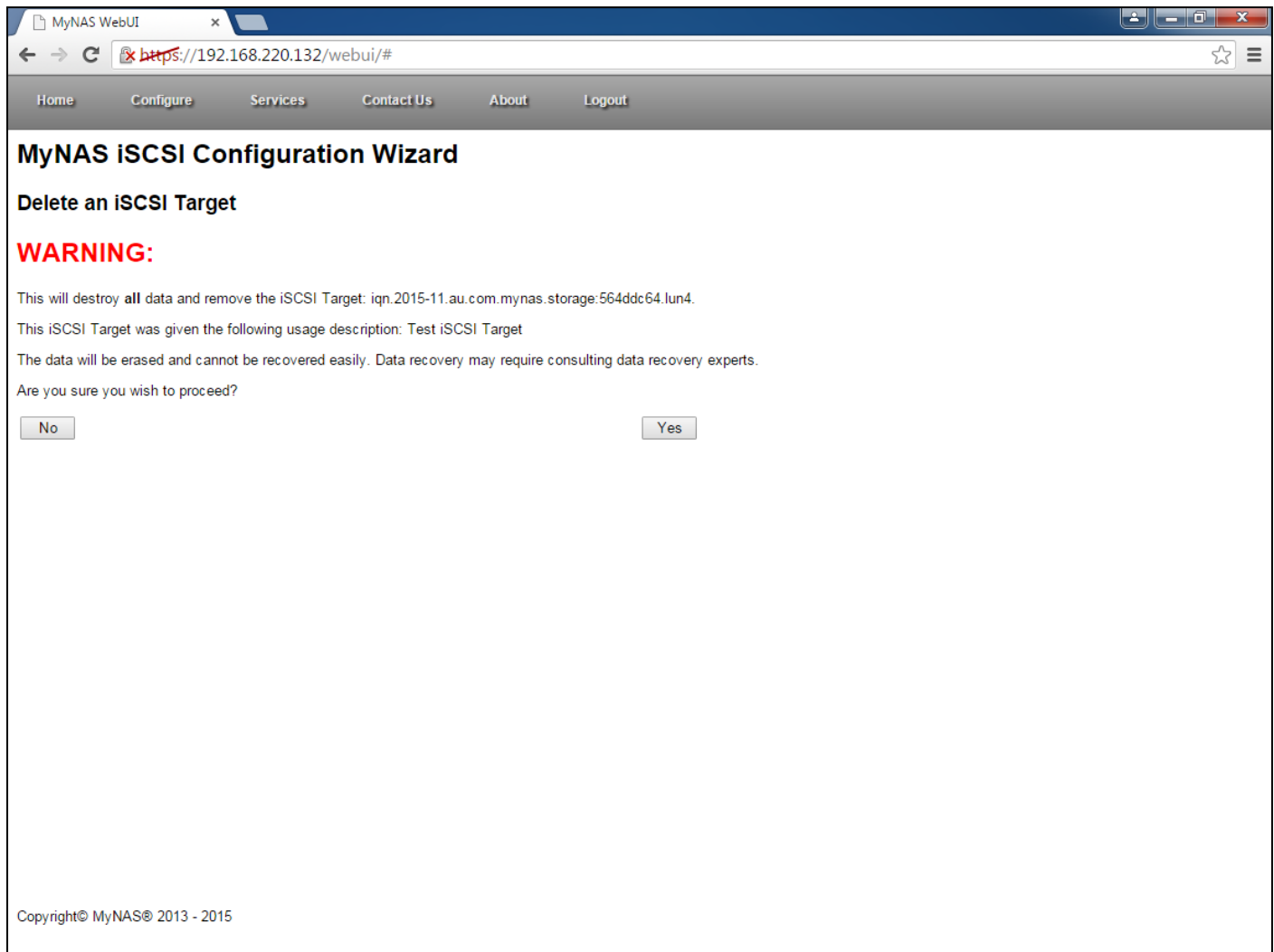


Click 'Delete iSCSI Target' to perform the delete operation

Select the iSCSI Target to delete and click 'Next'

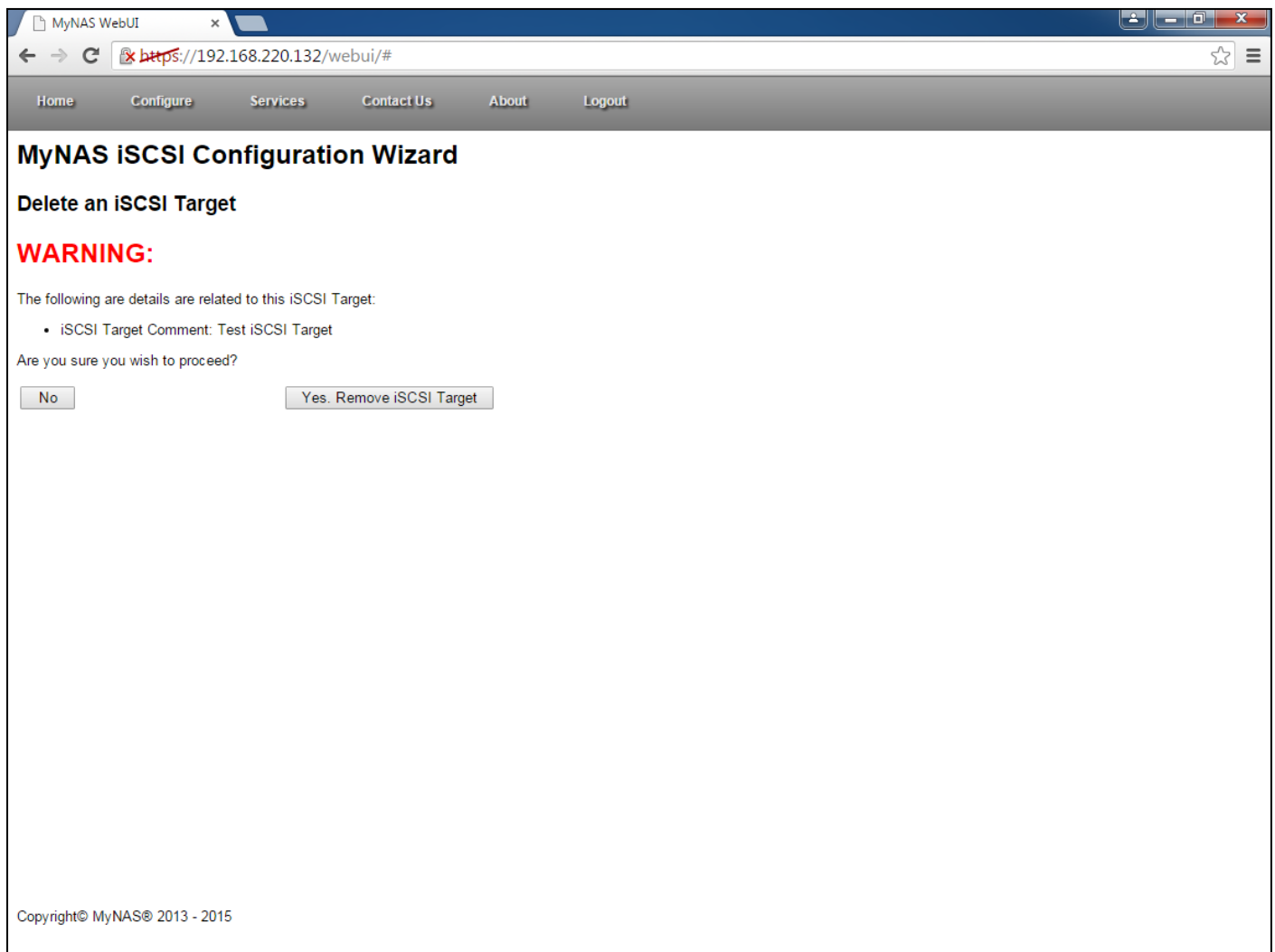


A warning will be displayed about the destructive nature of this operation. Details about this specific iSCSI Target will also be displayed:

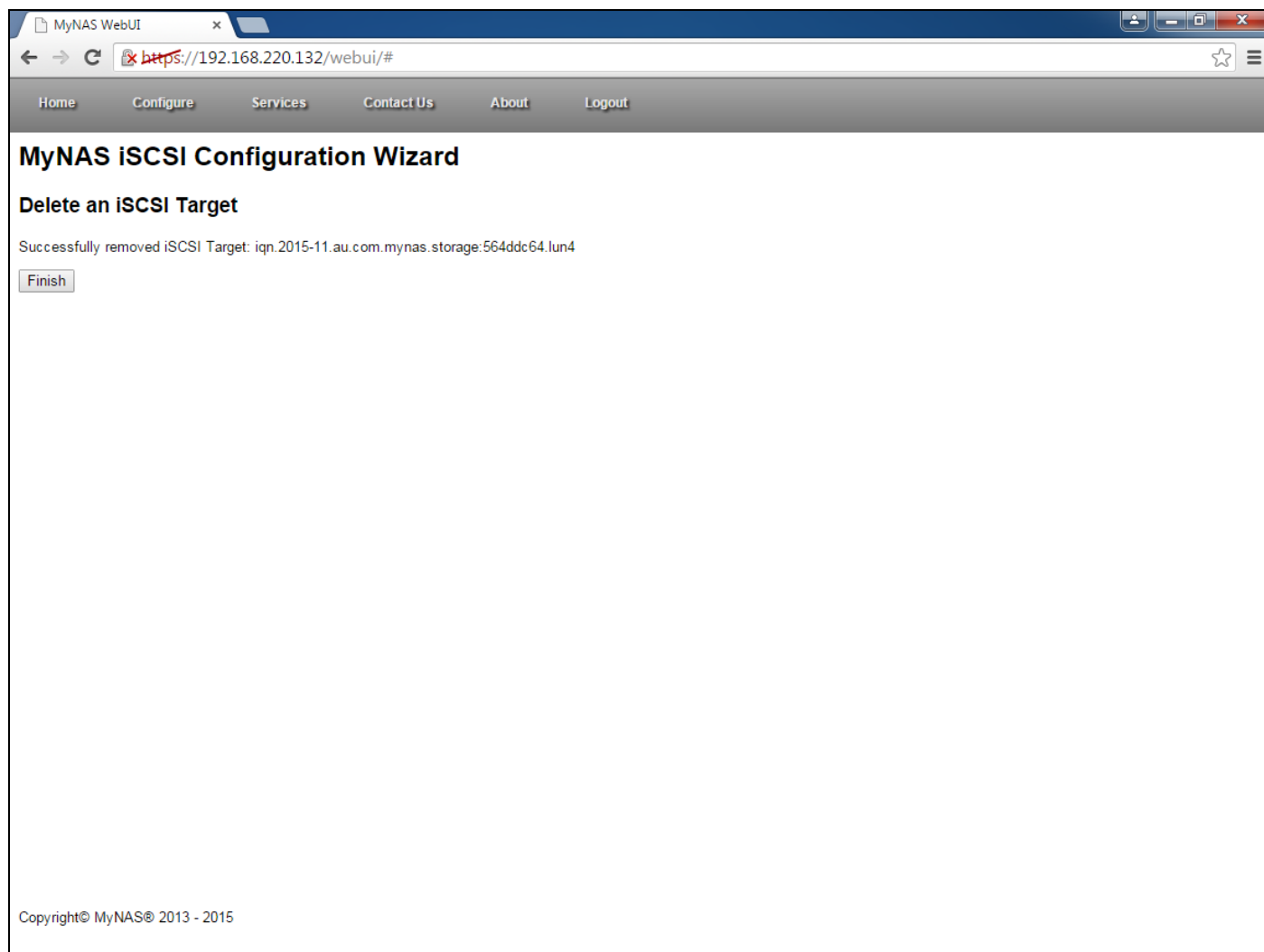


If you are sure that this is the iSCSI Target to remove, click 'Yes' to continue

MyNAS will now confirm that you wish to remove this iSCSI Target:



Click 'Yes. Remove iSCSI Target' to complete the iSCSI Target removal.



Click 'Finish' to complete removing the iSCSI Target.

Configuring MyNAS® Storage Appliance Data Share Authentication

When accessing Data Shares, MyNAS has the option of providing the network shares with the following security profiles

- All network users have full control
- Utilise local users and groups to control read and write operations
- Utilise Active Directory to control read and write operations

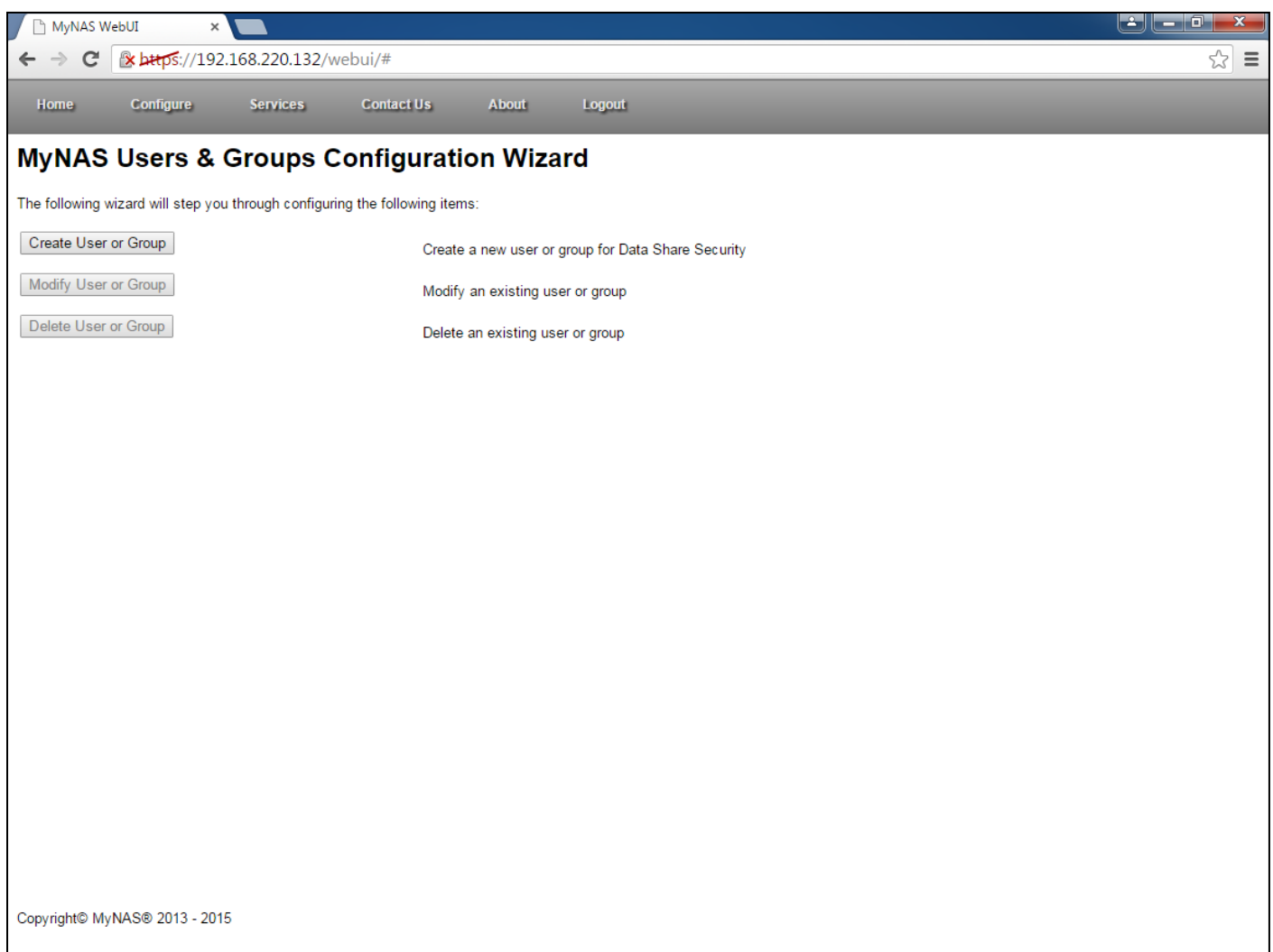
Authentication can be configured at any time, with the capability to re-configure the Data Shares with any new permission requirements.

Configuring Local Users and Groups for Data Share access

By configuring local users and groups, these user and groups can be used to control access permissions to the Data Shares on MyNAS. Follow the directions below to create, modify and delete local users and groups.

Creating MyNAS Local Users and Groups

To configure local users or groups, login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Users & Groups'. Once selected, the following will be displayed:



To create a user, click on the 'Create User or Group' button, and the following will be displayed:

MyNAS WebUI

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MyNAS Users & Groups Configuration Wizard

Create a new user or group

Creating a new user or group will allow you to add security to your MyNAS Data Shares, should you wish to do so.

The new user password must also meet the following complexity requirements:

- The password must be longer than 6 characters
- The password must not be based on a dictionary word
- The password cannot contain the username or reverse username
- The password must have at least 2 upper case characters
- The password must have at least 2 number characters
- The password must have at least 2 special characters

User Name / Group Name:

Type: ☒ User ☐ Group

Password:

Confirm Password:

Group Members:

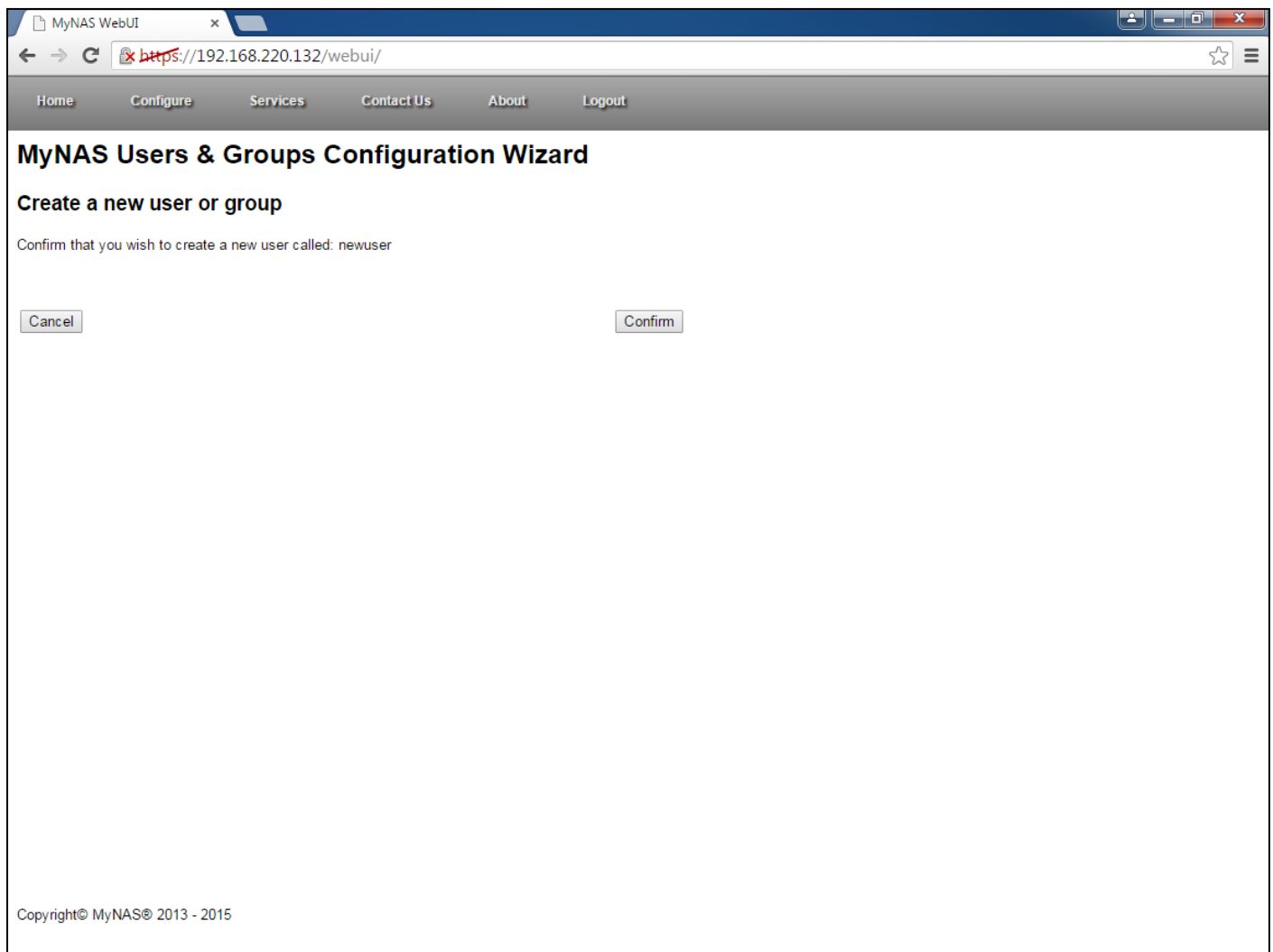
Copyright© MyNAS® 2013 - 2015

Type in the required details for this user or group, and click 'Next'.

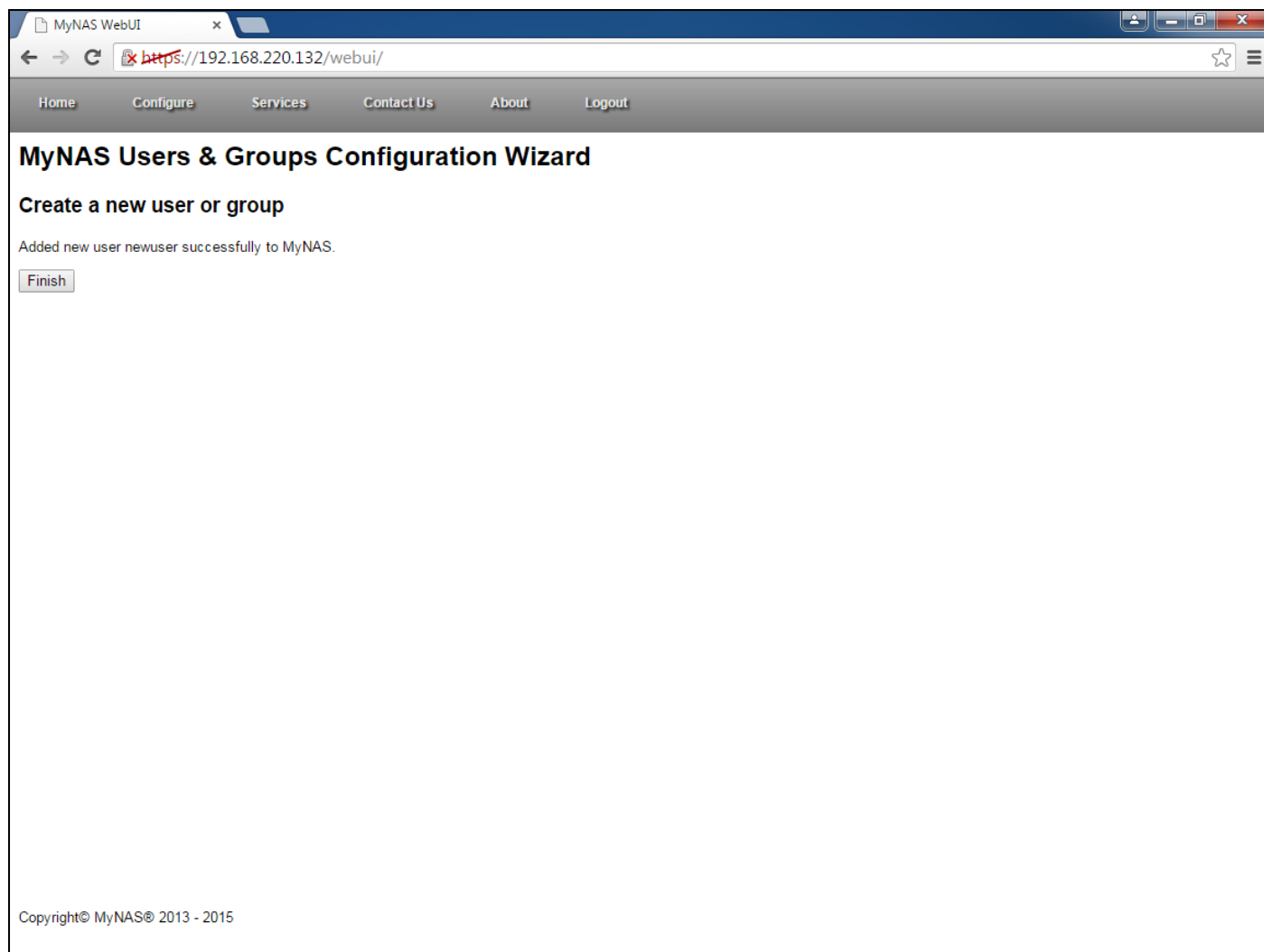
Note: The user password must conform to the following password complexity requirements:

- The password must be longer than 6 characters
- The password must not be based on a dictionary word
- The password cannot contain the username or reverse username
- The password must have at least 2 upper case characters
- The password must have at least 2 number characters
- The password must have at least 2 special characters

Confirm that you want to create the user or group and click 'Confirm'



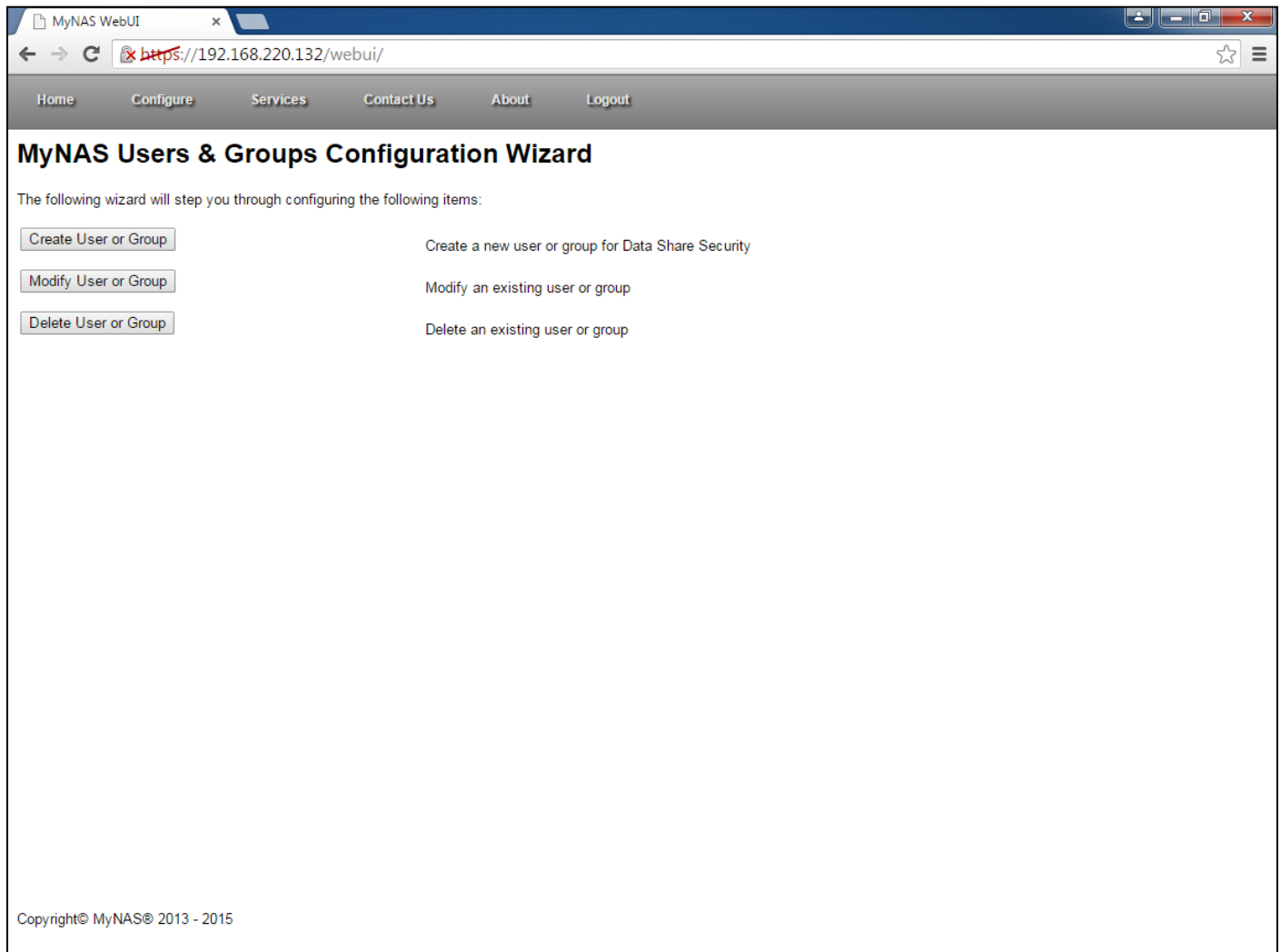
MyNAS will now provision the user as requested.



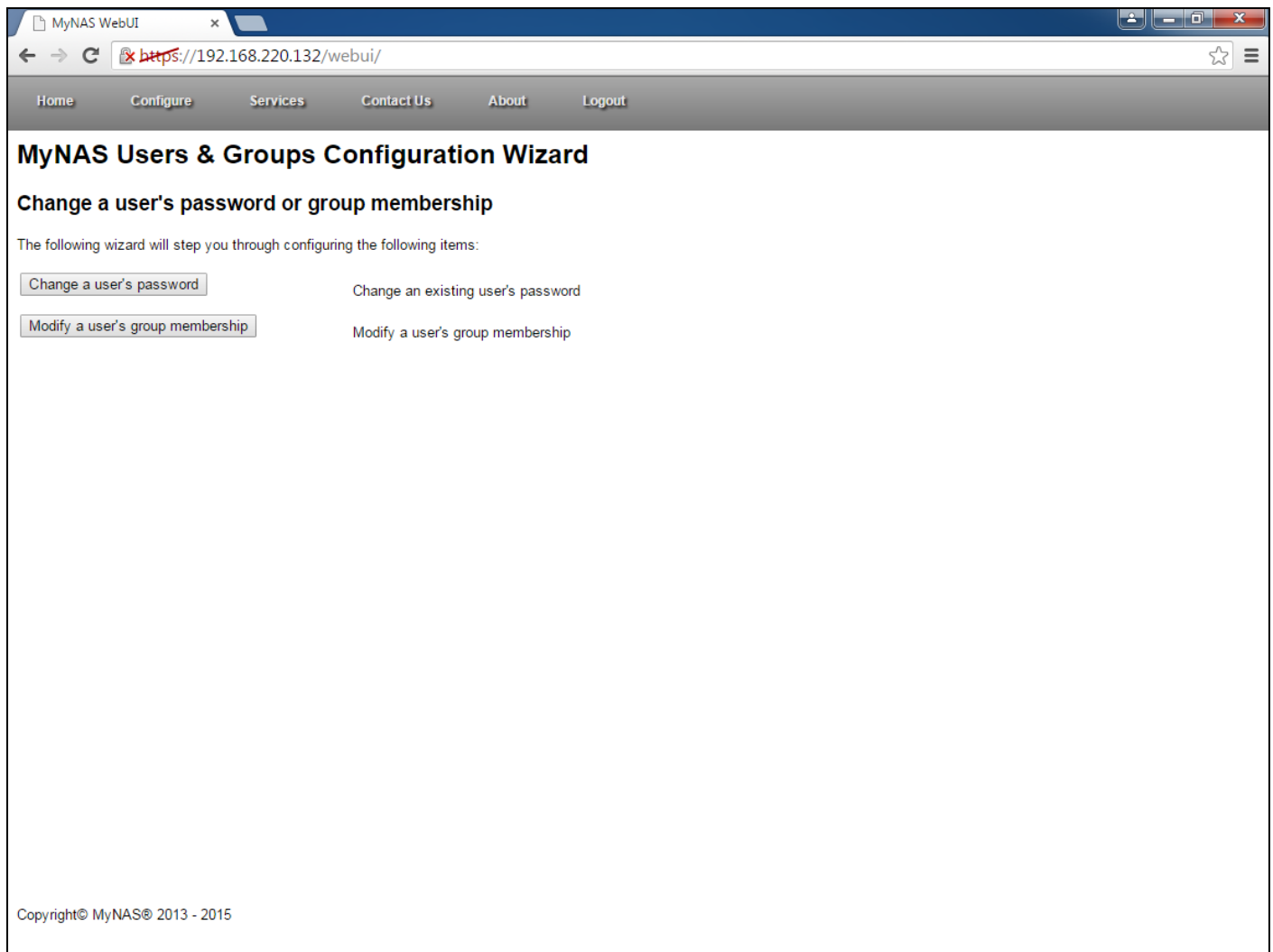
Click 'Finish' to complete the task.

Modifying MyNAS Local Users and Groups

To modify a local users or group, login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Users & Groups'. Once selected, the following will be displayed:



To modify an existing user or group, click the Modify User or Group button, and the following will be displayed:



Select the desired modification:

- To change a local user's password, click on the 'Change a user's password' button
- To modify a user's group membership, click on the 'Modify a user's group membership' button

For the purpose of this document, we will modify a user's password.

MyNAS WebUI x

← → ↻ ~~https://~~192.168.220.132/webui/ ☆ ≡

Home Configure Services Contact Us About Logout

MyNAS Users & Groups Configuration Wizard

Change a user's password

Please select the user to change the password for:

MyNAS System User

Select User

- newuser
- Select User Name -
- newuser
- newuser1
- newuser2

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Once the appropriate user is selected, click 'Select User'

The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The page title is "MyNAS Users & Groups Configuration Wizard". The navigation bar includes links for Home, Configure, Services, Contact Us, About, and Logout. The main heading is "Change a user's password". Below this, a message states: "Enter in the current user password together with the new password to successfully change the selected user's password. The new password must also meet the following complexity requirements:" followed by a bulleted list of requirements. The form includes a "MyNAS Local User" dropdown menu with "newuser" selected, and three input fields for "Old Password", "New Password", and "Confirm Password". A "Change Password" button is located at the bottom of the form. The footer contains the text "Copyright© MyNAS® 2013 - 2015".

MyNAS WebUI x

← → ↻ ~~https://~~192.168.220.132/webui/ ☆ ≡

Home Configure Services Contact Us About Logout

MyNAS Users & Groups Configuration Wizard

Change a user's password

Enter in the current user password together with the new password to successfully change the selected user's password.

The new password must also meet the following complexity requirements:

- The password must be longer than 6 characters
- The password must not be based on a dictionary word
- The password cannot contain the username or reverse username
- The password must have at least 2 upper case characters
- The password must have at least 2 number characters
- The password must have at least 2 special characters

MyNAS Local User: newuser

Old Password:

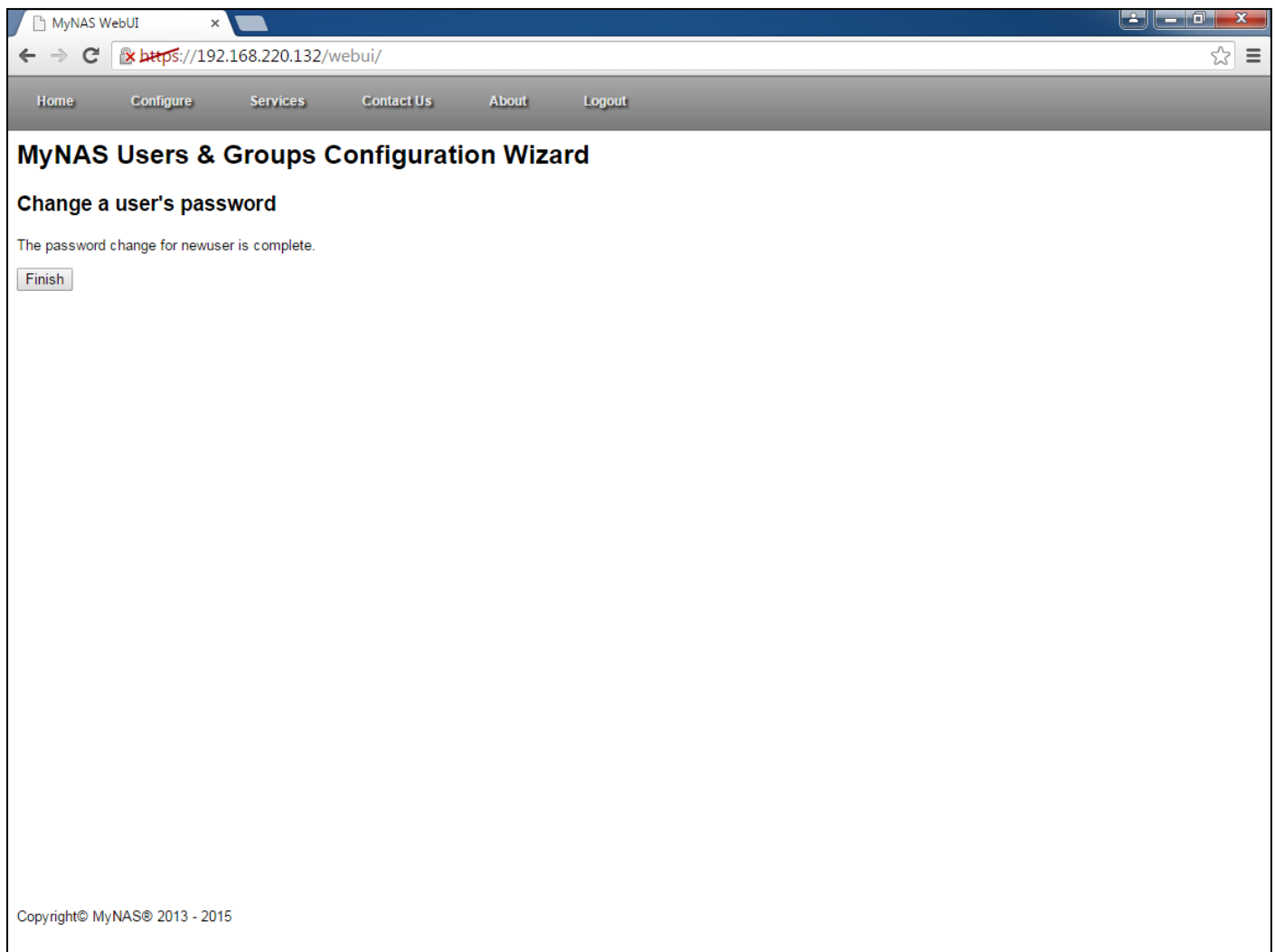
New Password:

Confirm Password:

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Type in the existing users password, together with the new password and its confirmation. Once complete, click the 'Change Password' button.

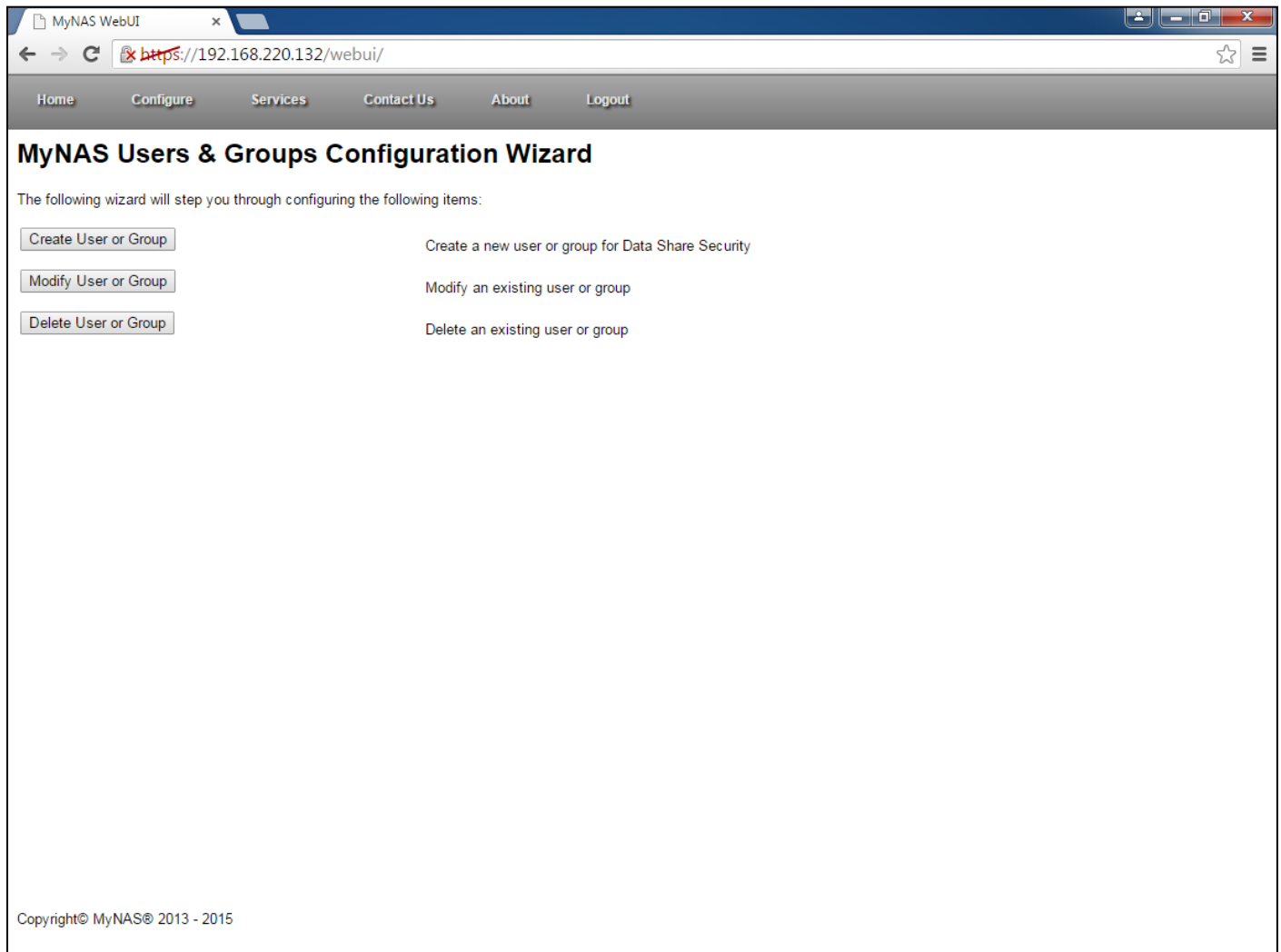
MyNAS will now process the password change.



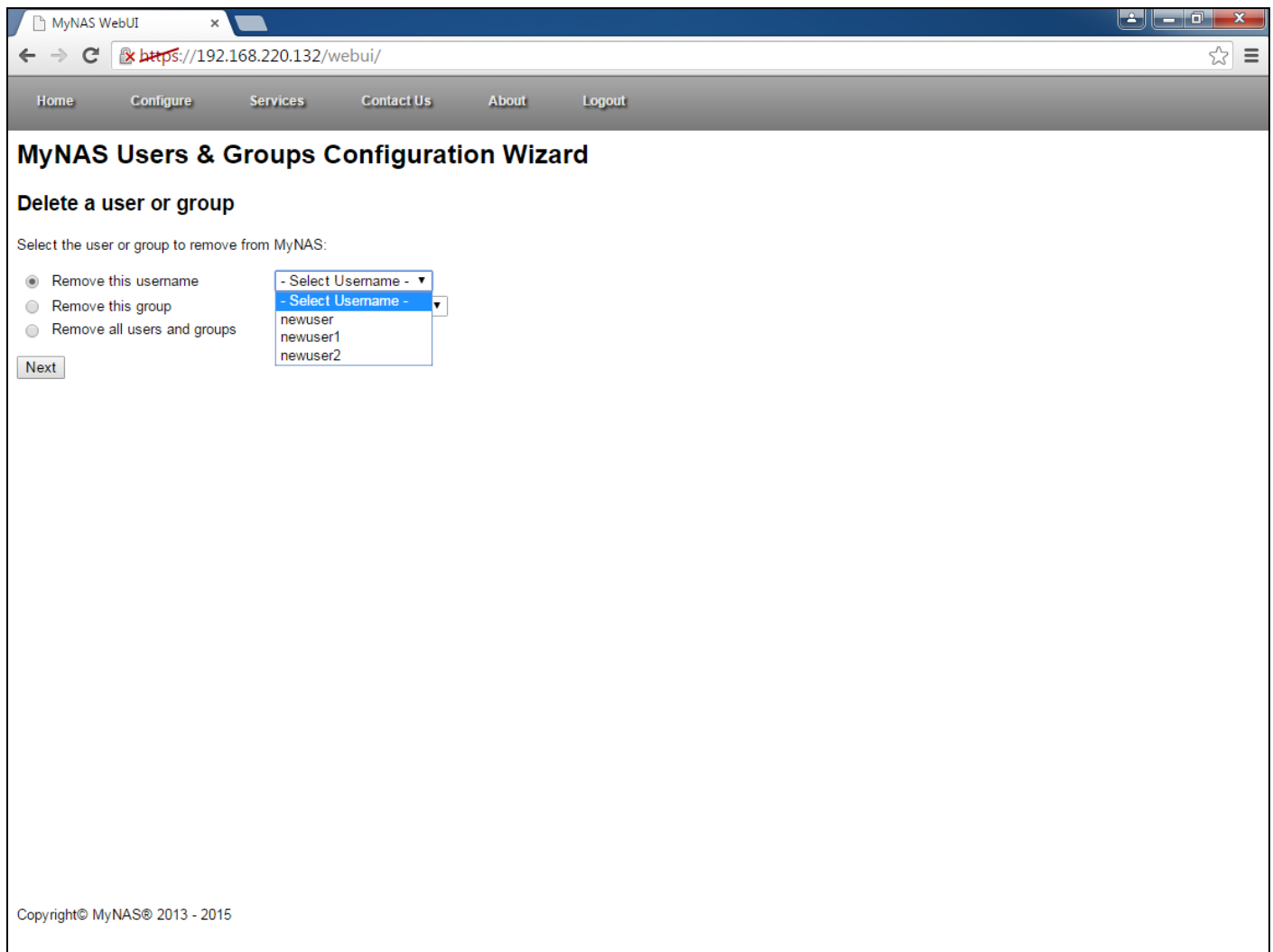
Click 'Finish' to complete the password change process.

Deleting MyNAS Local Users and Groups

To delete a local users or group, login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Users & Groups'. Once selected, the following will be displayed:



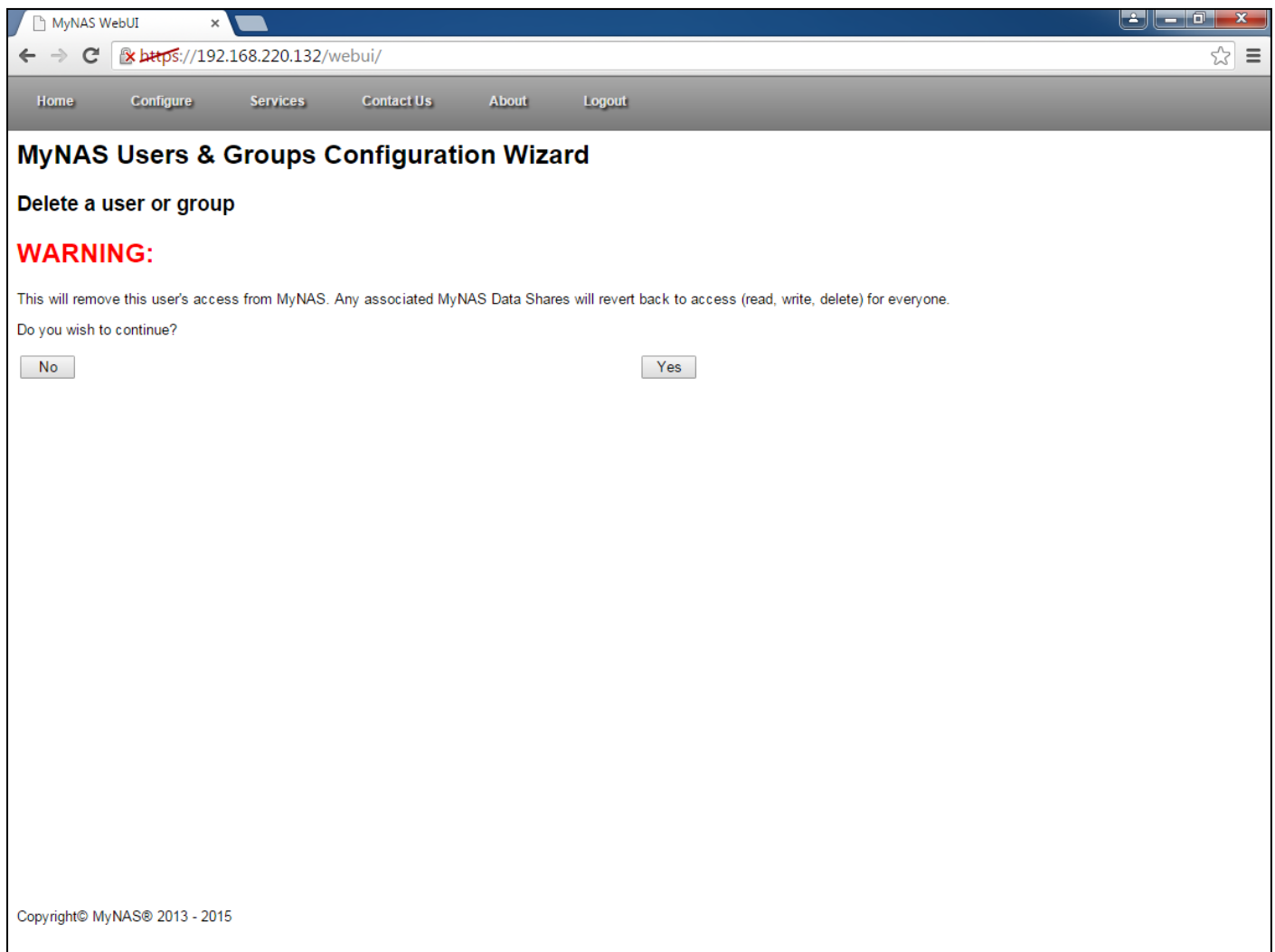
To delete a user or group, click on the 'Delete User or Group' button, and the following will be displayed:



From the drop down, select the appropriate user or group to remove and click 'Next'

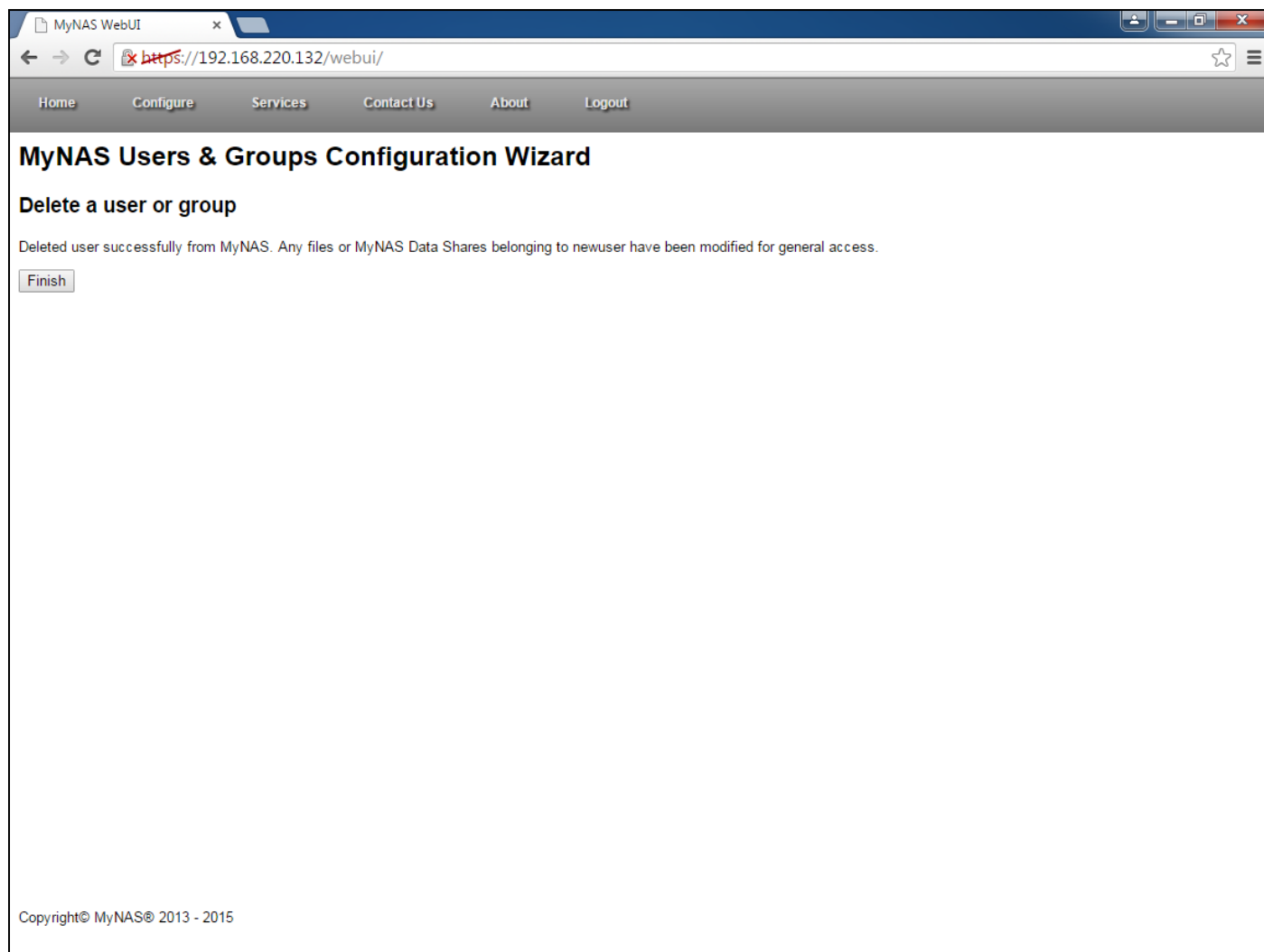
Note: If you want to remove all local users and groups in one action, select the third radio button.

A warning will now be displayed in regards to this action:



If you wish to continue with performing this action, click 'Yes'

The user or group will now be removed as requested



Click 'Finish' to complete with wizard.

Configuring MyNAS Active Directory

By configuring MyNAS to become an Active Directory, this provides the following capabilities

- Authentication for local Data Shares
- Authentication for your whole network environment³ supporting using home directories, roaming user profiles and group policies

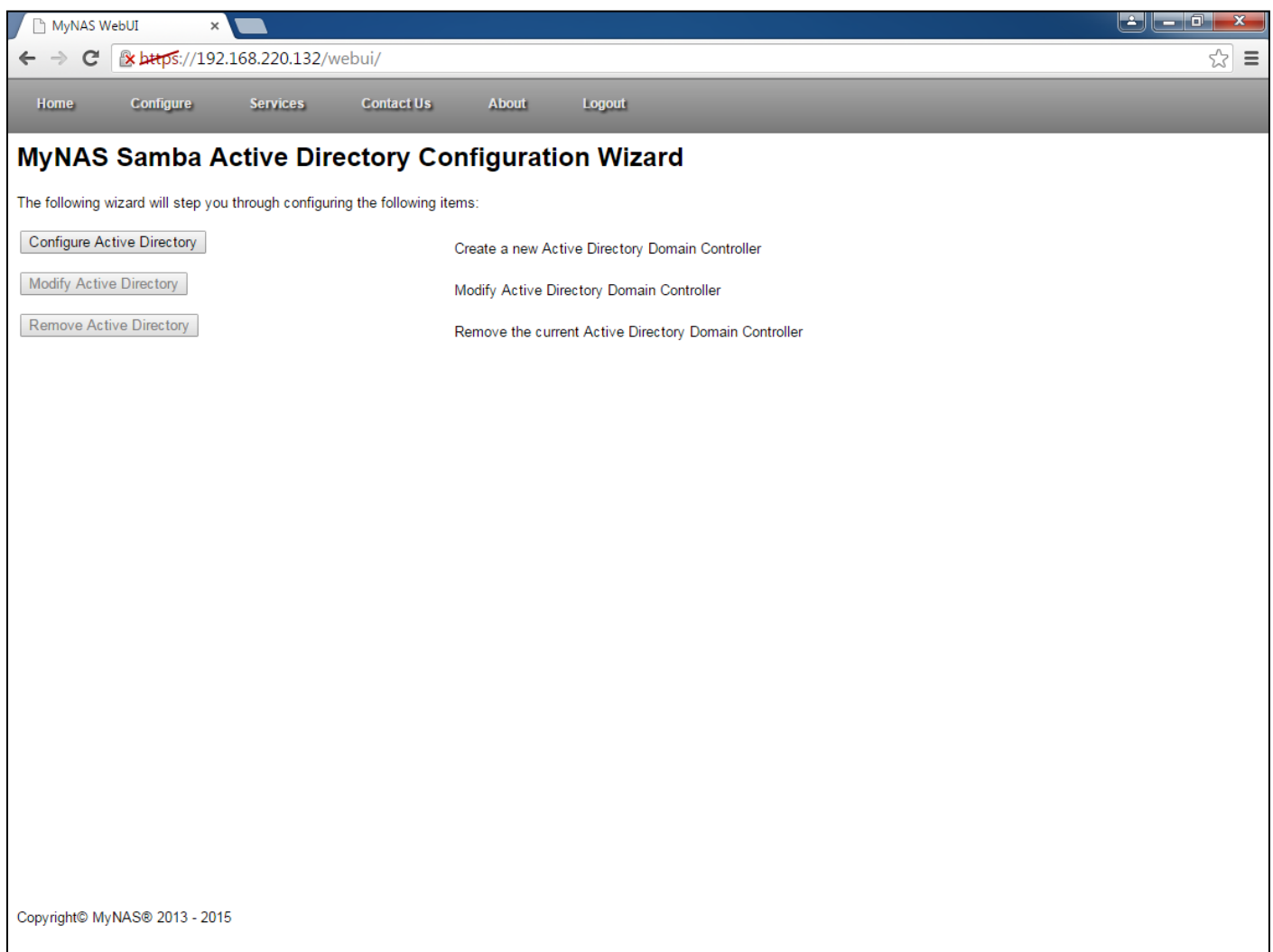
Follow the directions below for configuring Active Directory on MyNAS.

Note: In order to configure Active Directory, a static IP address is required. To configure a static IP address, use the MyNAS Initial Setup Wizard.

Configuring Active Directory

To configure Active Directory, login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Active Directory'.

Once selected, the following will be displayed:

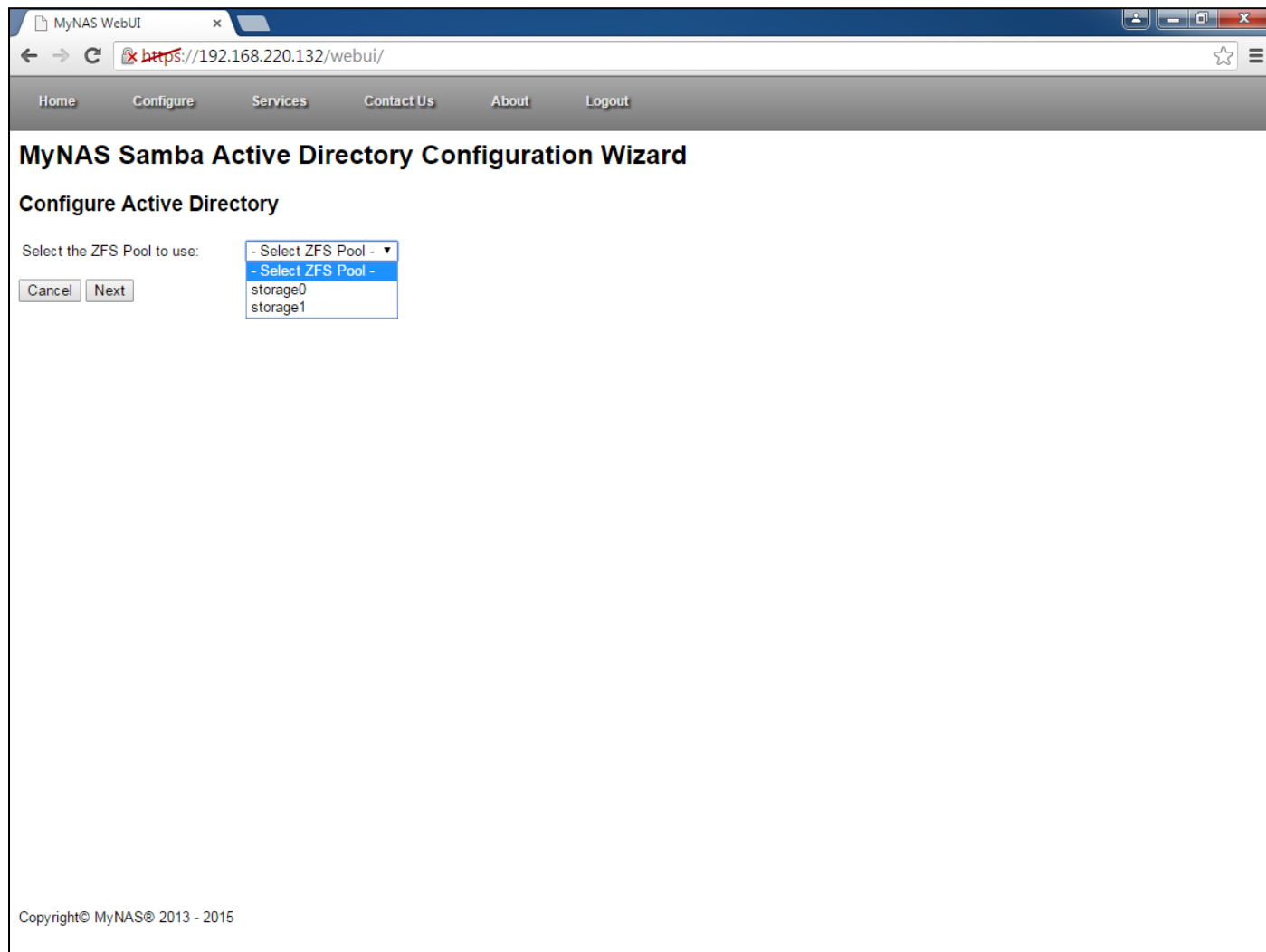


Click on the 'Configure Active Directory' button to begin the configuration wizard.

³ MyNAS has not been benchmarked for enterprise environments. It has been tested however for supporting small to medium sized deployments.

Depending on the ZFS Pool configuration, if there are more than 1 ZFS Pool configured, MyNAS will ask which ZFS Pool should be used for Active Directory:

Note: The ZFS Pool will be used for the Active Directory Database and will be used for creating a User Home Directory share.



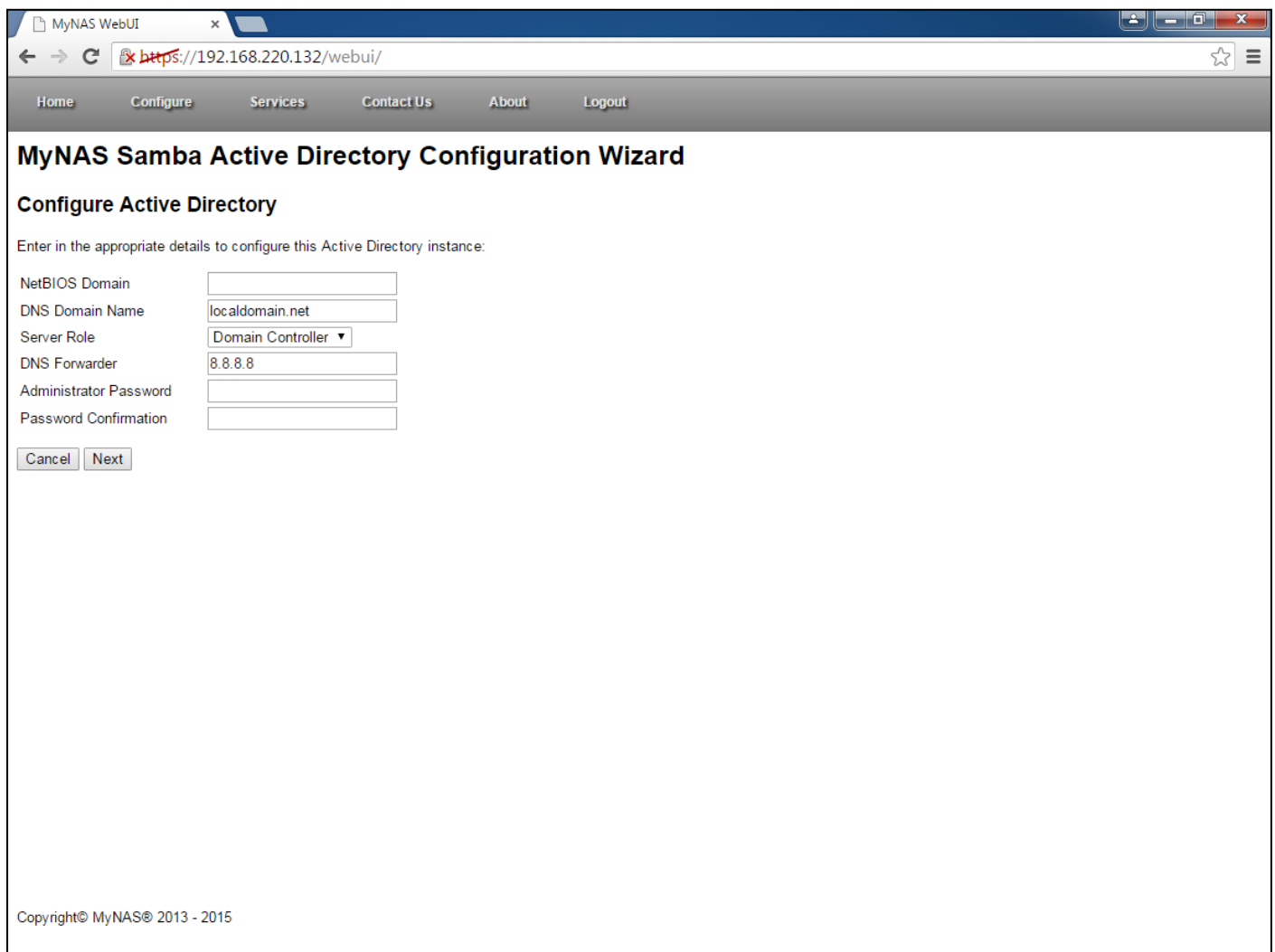
The screenshot shows a web browser window titled "MyNAS WebUI" with the address bar displaying "https://192.168.220.132/webui/". The browser's navigation bar includes links for "Home", "Configure", "Services", "Contact Us", "About", and "Logout". The main content area is titled "MyNAS Samba Active Directory Configuration Wizard" and contains a section "Configure Active Directory". Within this section, the text "Select the ZFS Pool to use:" is followed by a dropdown menu. The dropdown menu is open, showing the options "- Select ZFS Pool -", "storage0", and "storage1". Below the dropdown menu are two buttons: "Cancel" and "Next". At the bottom left of the page, the copyright notice "Copyright© MyNAS® 2013 - 2015" is visible.

Once the appropriate ZFS pool is selected, click 'Next'

Type in the appropriate details for the configuration of this Active Directory instance.

Note: The initial Administrator password must meet Windows password complexity requirements as detailed below:

- Not contain the user's account name or parts of the user's full name that exceed two consecutive characters
- Be at least seven characters in length
- Contain characters from three of the following four categories:
 - English uppercase characters (A through Z)
 - English lowercase characters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphabetic characters (for example, !, \$, #, %)



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS Samba Active Directory Configuration Wizard". Below this is the section "Configure Active Directory". A prompt says "Enter in the appropriate details to configure this Active Directory instance:". The form contains the following fields:

- NetBIOS Domain: (empty text box)
- DNS Domain Name: `localdomain.net`
- Server Role: `Domain Controller` (dropdown menu)
- DNS Forwarder: `8.8.8.8`
- Administrator Password: (empty text box)
- Password Confirmation: (empty text box)

At the bottom of the form are "Cancel" and "Next" buttons. The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

Once configured, click 'Next'.

MyNAS provides the capability to perform snapshots on your Active Directory. This allows the capability to 'roll back' your Active Directory installation to a previous point in time if required.

The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled "MyNAS WebUI". The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS Samba Active Directory Configuration Wizard". Below this is the section "Configure Active Directory".

Do you wish to enable snapshots for Active Directory?

Active Directory Snapshots will allow for the local rollback of the Active Directory database and schema in the event of a configuration issue.
Refer to the "MyNAS Installation Guide" for further details.

☒ No
☐ Yes, Enable snapshots for Active Directory

Snapshot Frequency

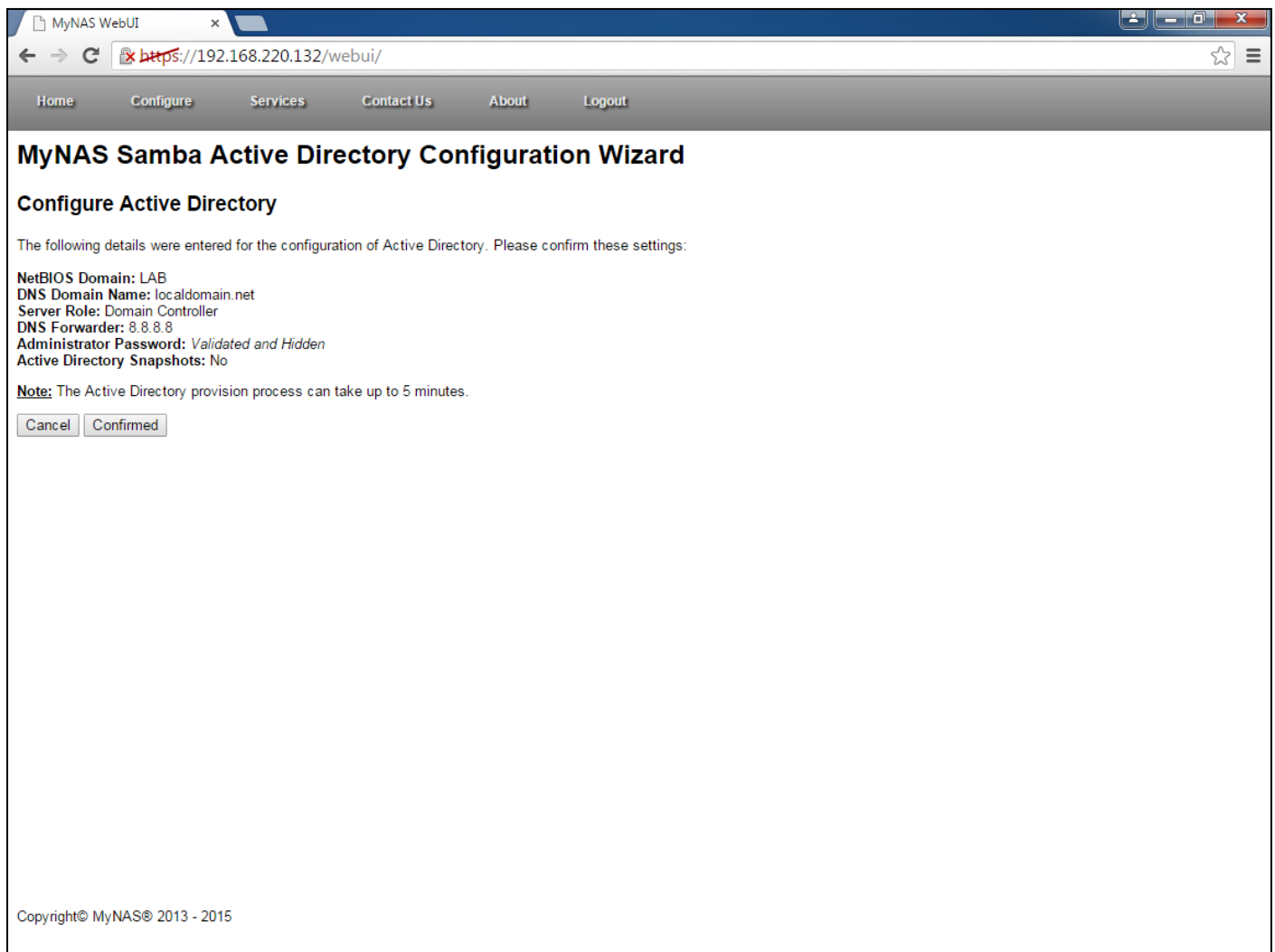
<input type="checkbox"/> Frequent	A new snapshot is taken every 5 minutes, keeping 12 snapshots
<input type="checkbox"/> Hourly	A new snapshot is taken hourly, keeping 24 snapshots
<input type="checkbox"/> Daily	A new snapshot is taken Daily at 1AM, keeping 31 snapshots
<input type="checkbox"/> Weekly	A new snapshot is taken Weekly at 1AM, keeping 52 snapshots
<input type="checkbox"/> Monthly	A new snapshot is taken Monthly at 1AM, keeping 12 snapshots

Cancel Next

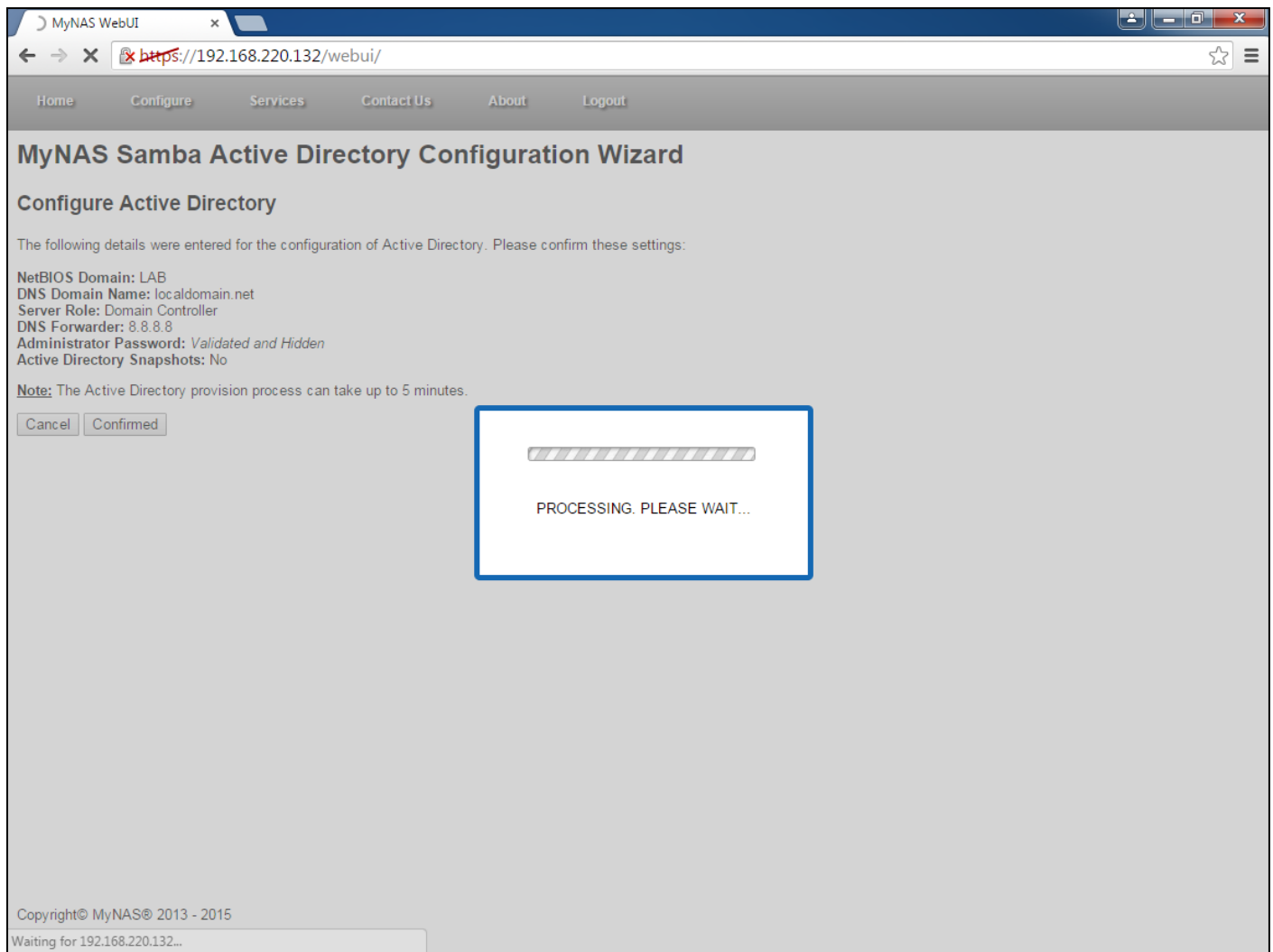
Copyright© MyNAS® 2013 - 2015

Select the appropriate snapshot configuration for your Active Directory and click 'Next'

Confirm the options selected for the Active Directory installation.

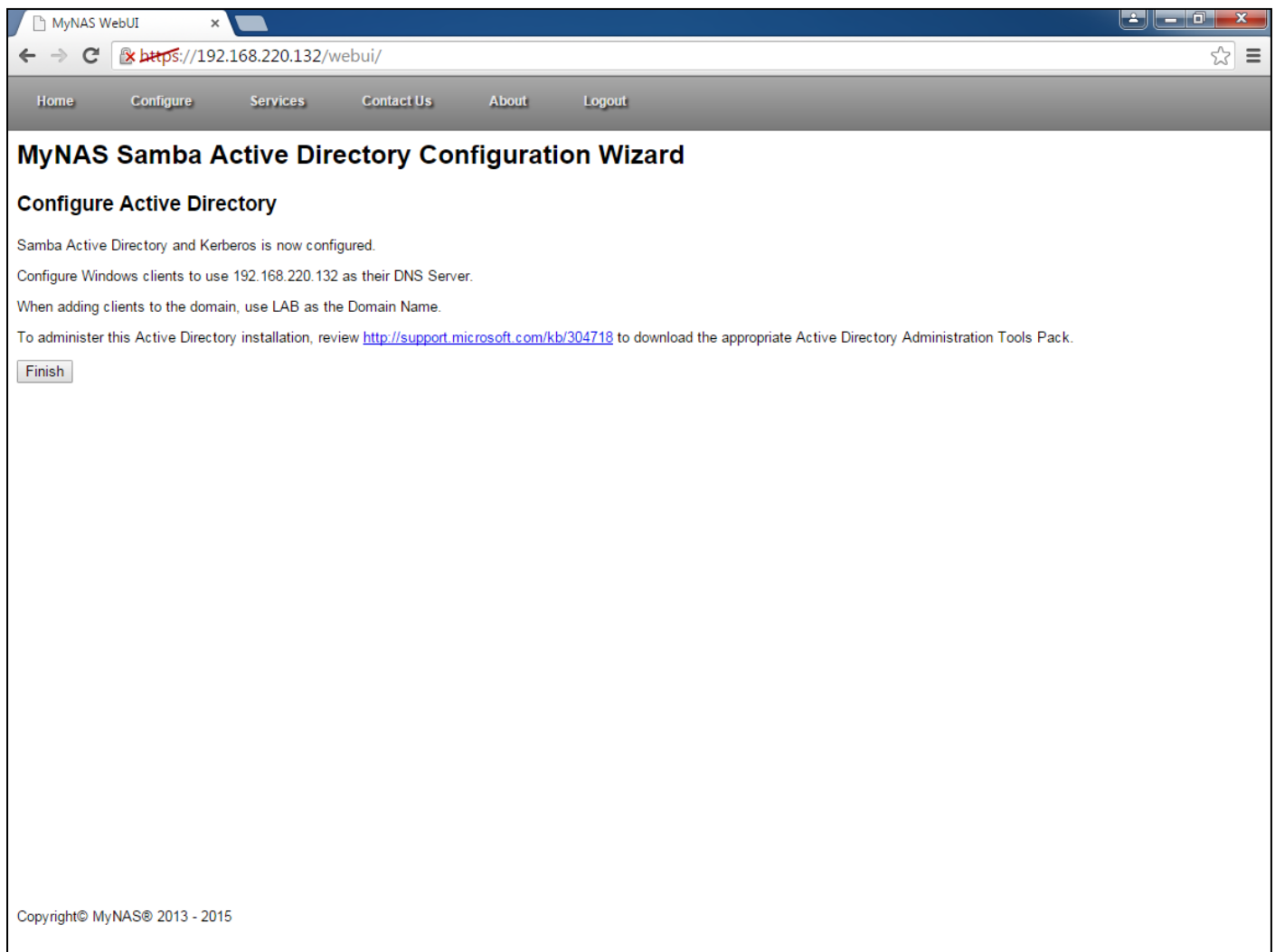


Once confirmed, click 'Confirmed'. MyNAS will now deploy and configure Active Directory on your MyNAS installation.



Note: The Active Directory creation request which can take up to 5 minutes.

Once the configuration task is complete, the following will be displayed.

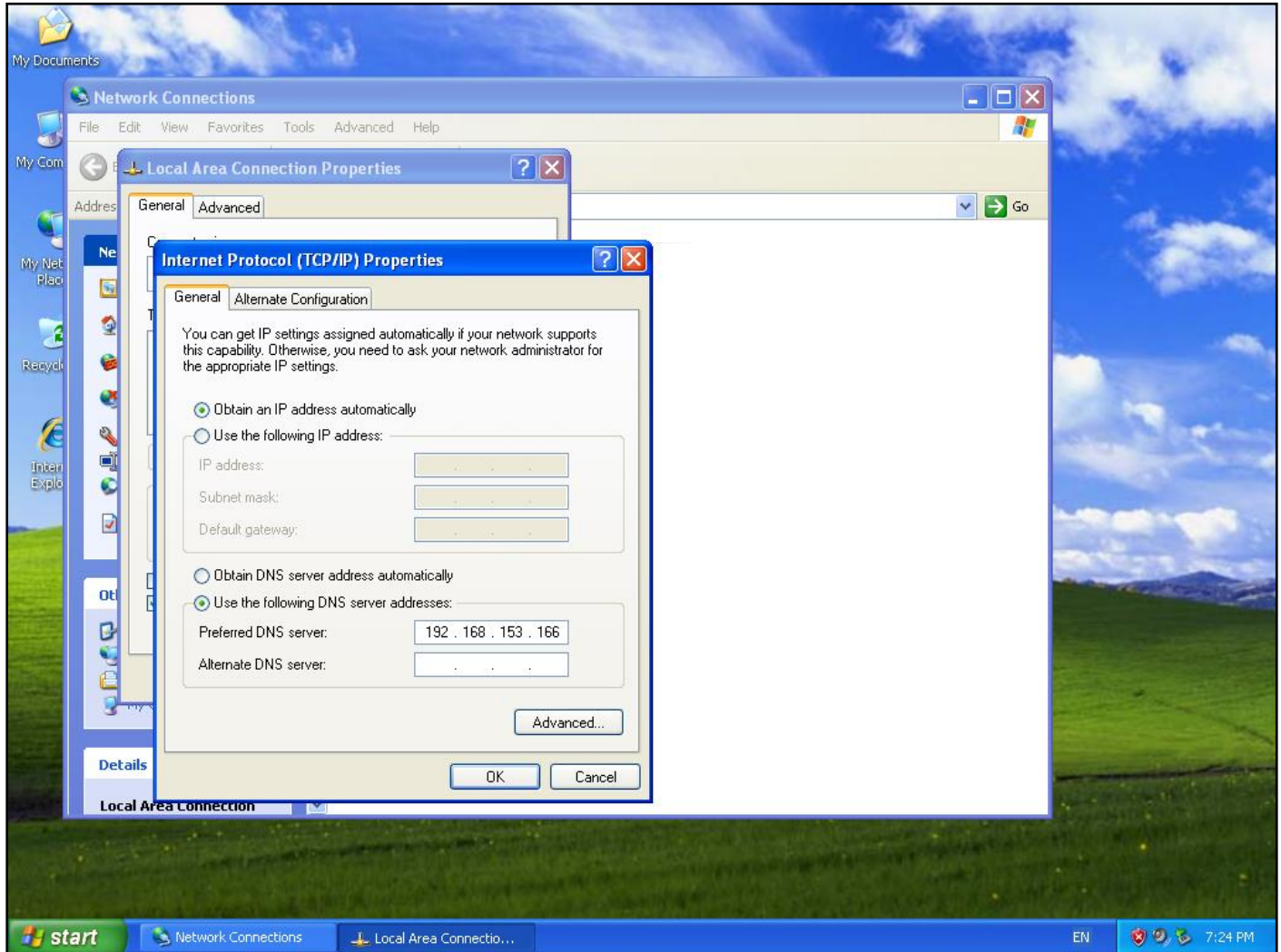


Click 'Finish' to complete the Active Directory wizard.

Joining a Computer to the Active Directory Domain

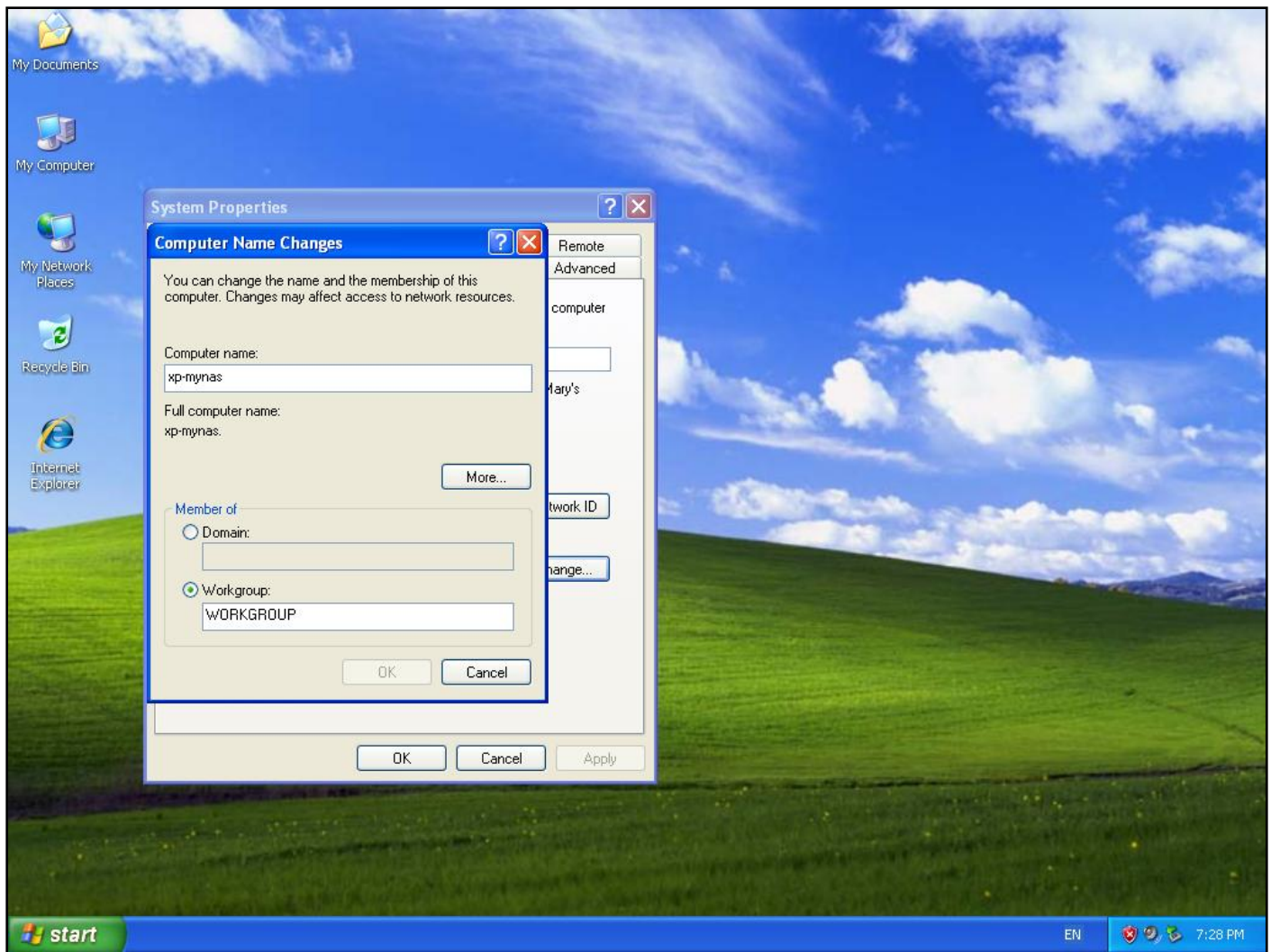
Once Active Directory is configured, additional systems can be configured to join this Active Directory to participate as part of the Domain. Follow the instructions below for adding a Windows system to the Domain.

Configure the Windows system to utilise the IP address of the Active Directory server as the DNS Server:

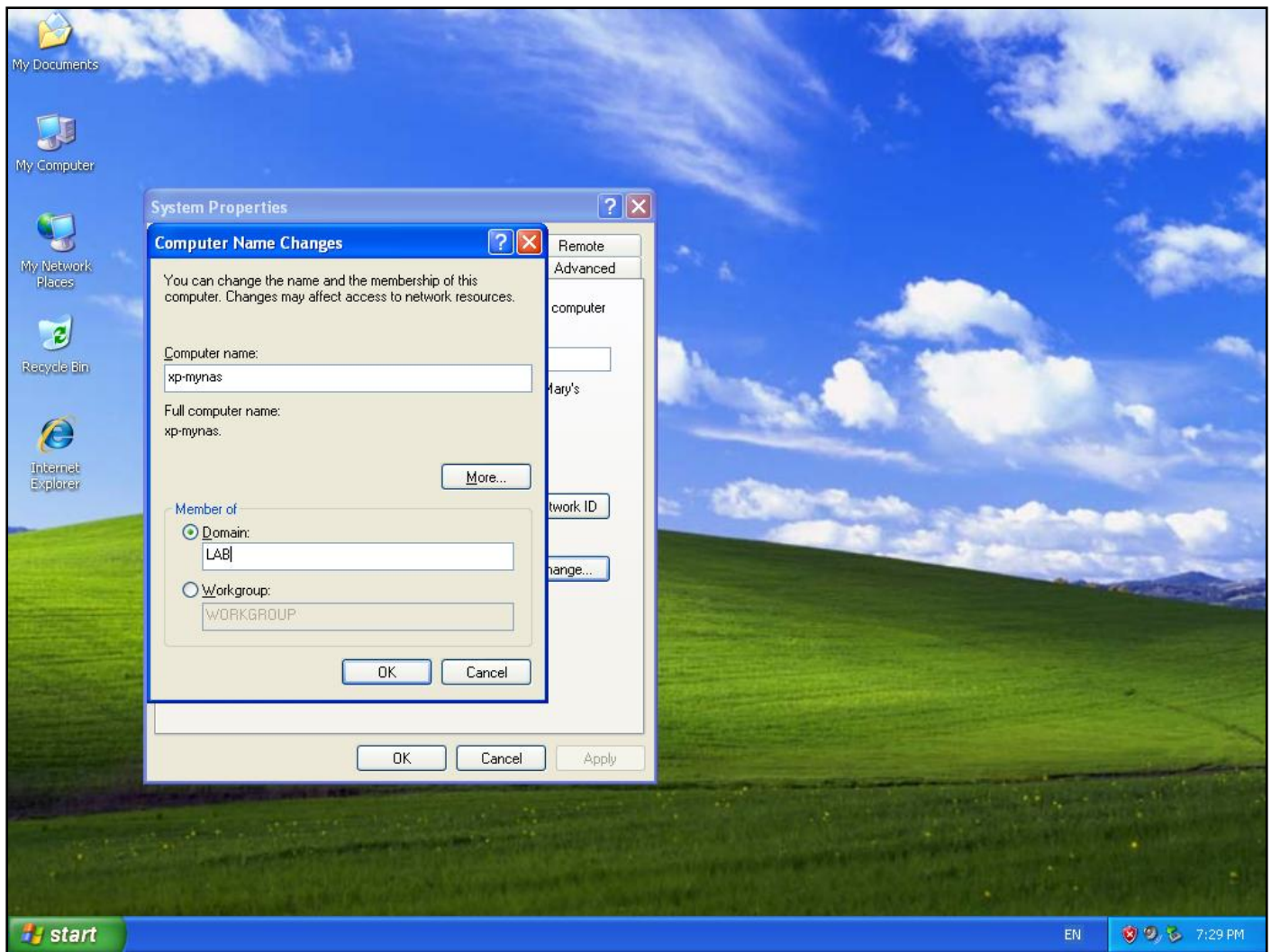


Click on OK to save the settings.

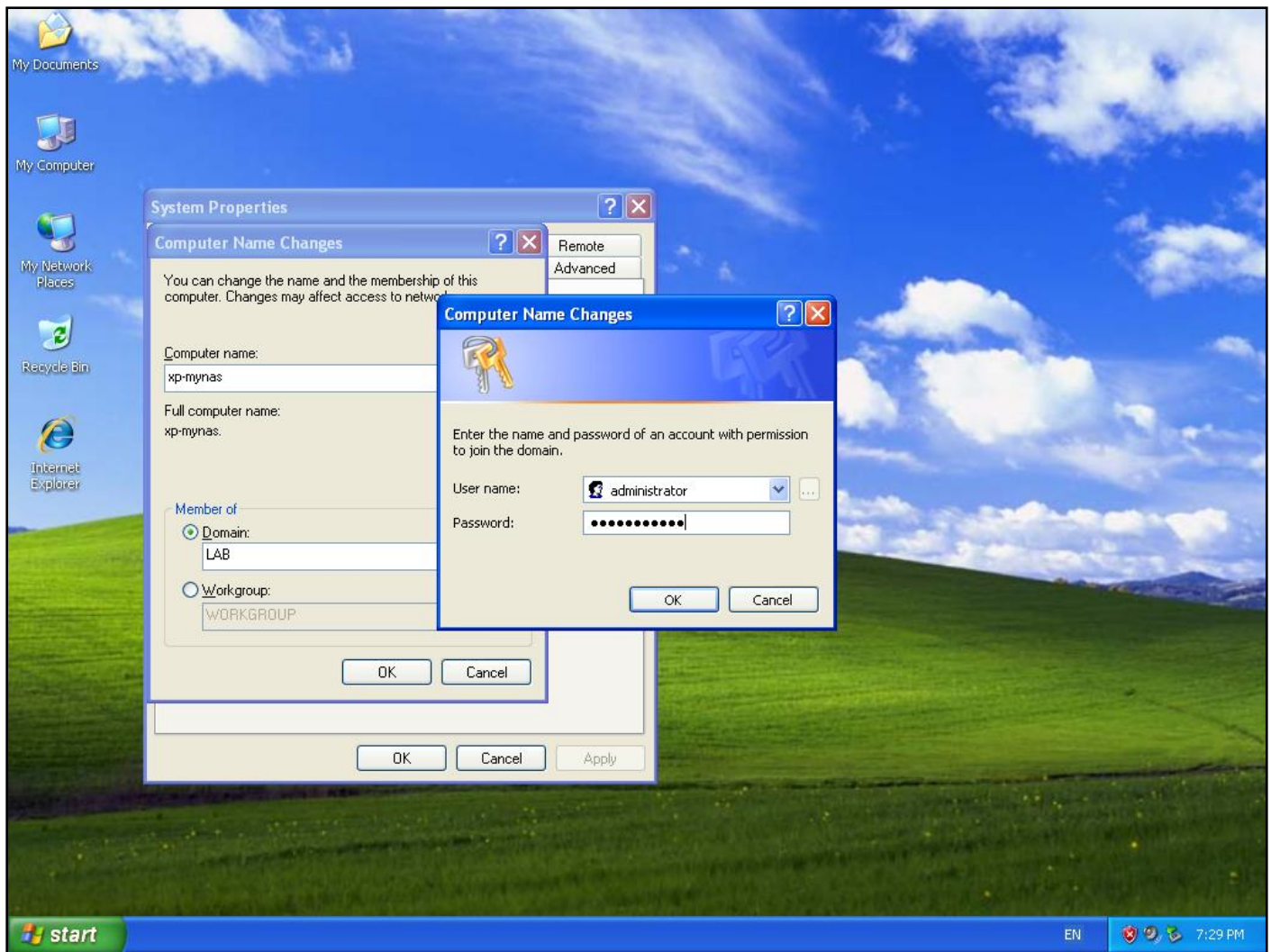
Next, bring up the system properties, and click the 'Change' button



Change the radio button from 'Workgroup' to 'Domain', typing in the NetBIOS domain used when configuring Active Directory

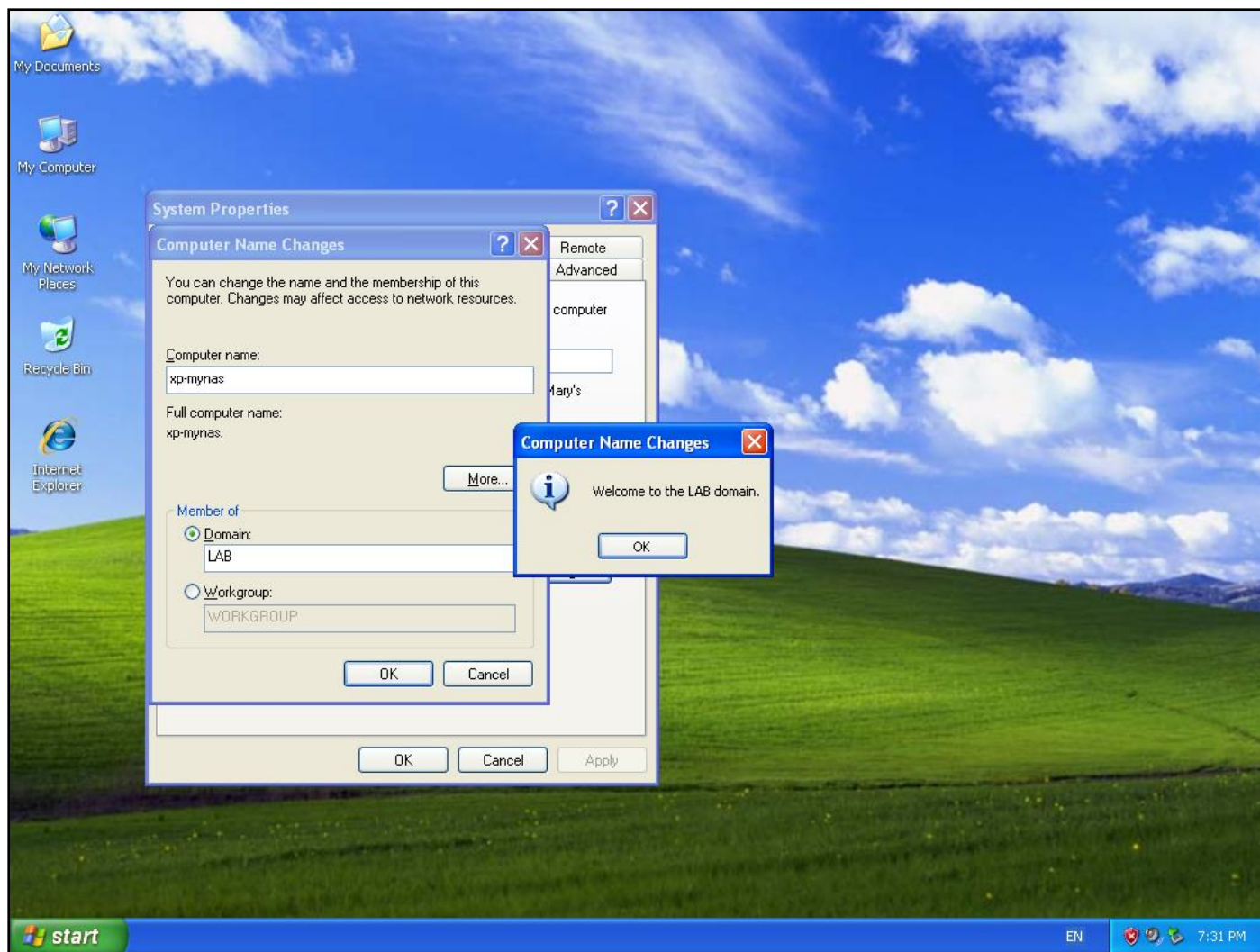


Click OK and type in the Administrator username and the password set during the Active Directory installation



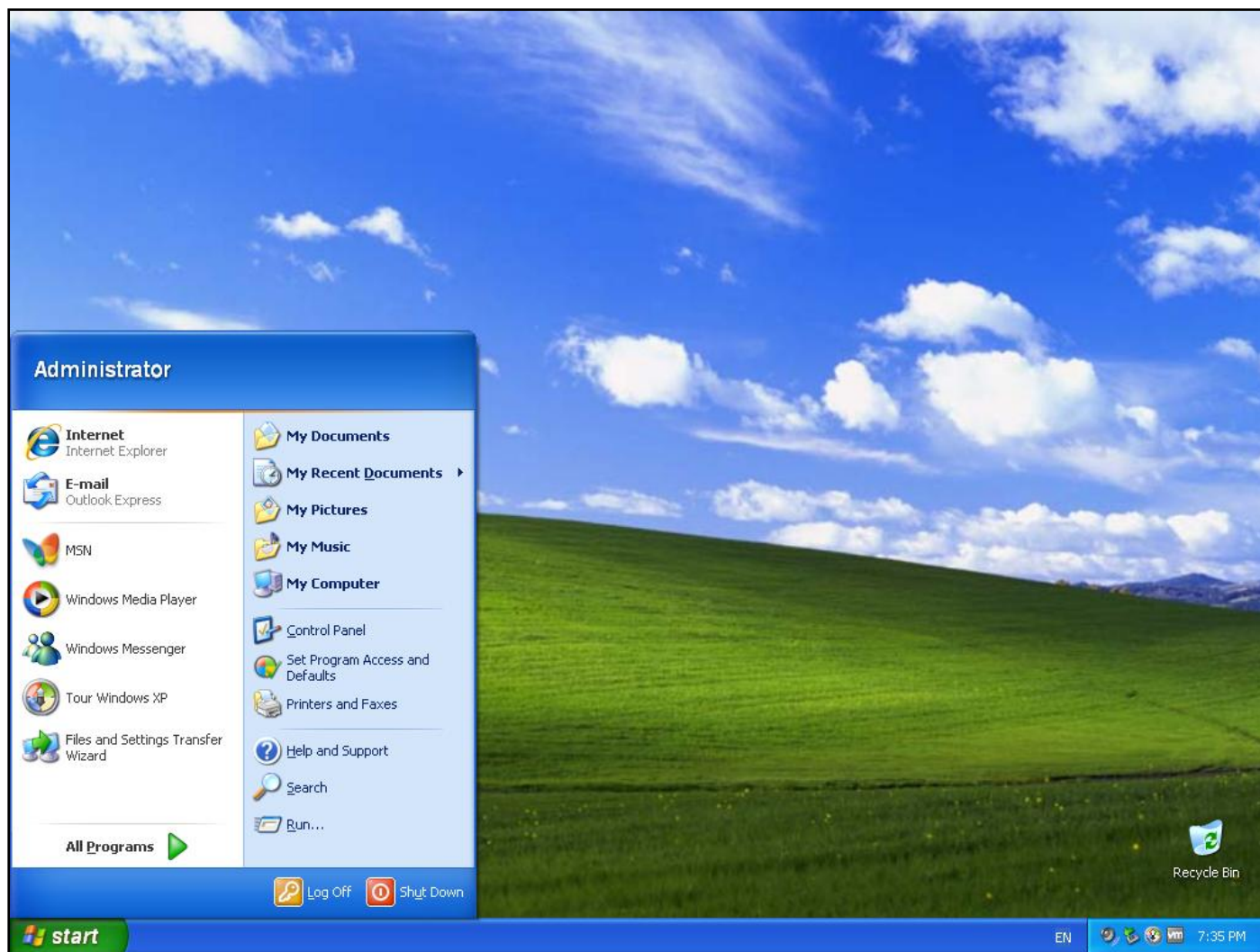
Click 'OK' and Windows will process the configuration of adding this system to Active Directory running on MyNAS.

Once complete, a confirmation is presented and the Windows system will need to be rebooted



After the reboot, you will be able to select the Domain and login as a domain user





Managing Users, Groups, Group Policies

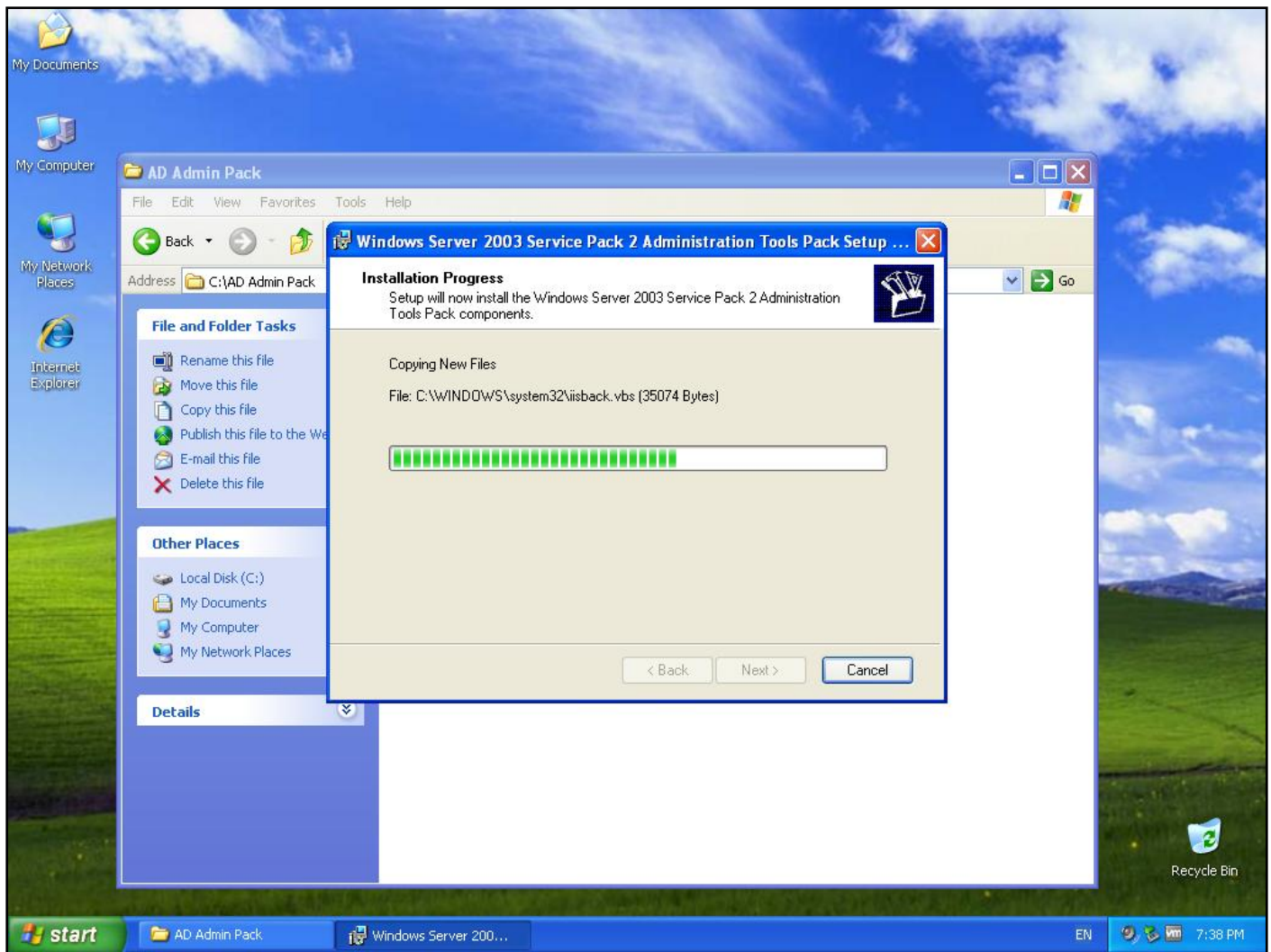
MyNAS does not provide the capability to manage the Active Directory instance directly through the WebUI. Specific tools from Microsoft are required to manage the Active Directory Domain when not using a Windows Server.

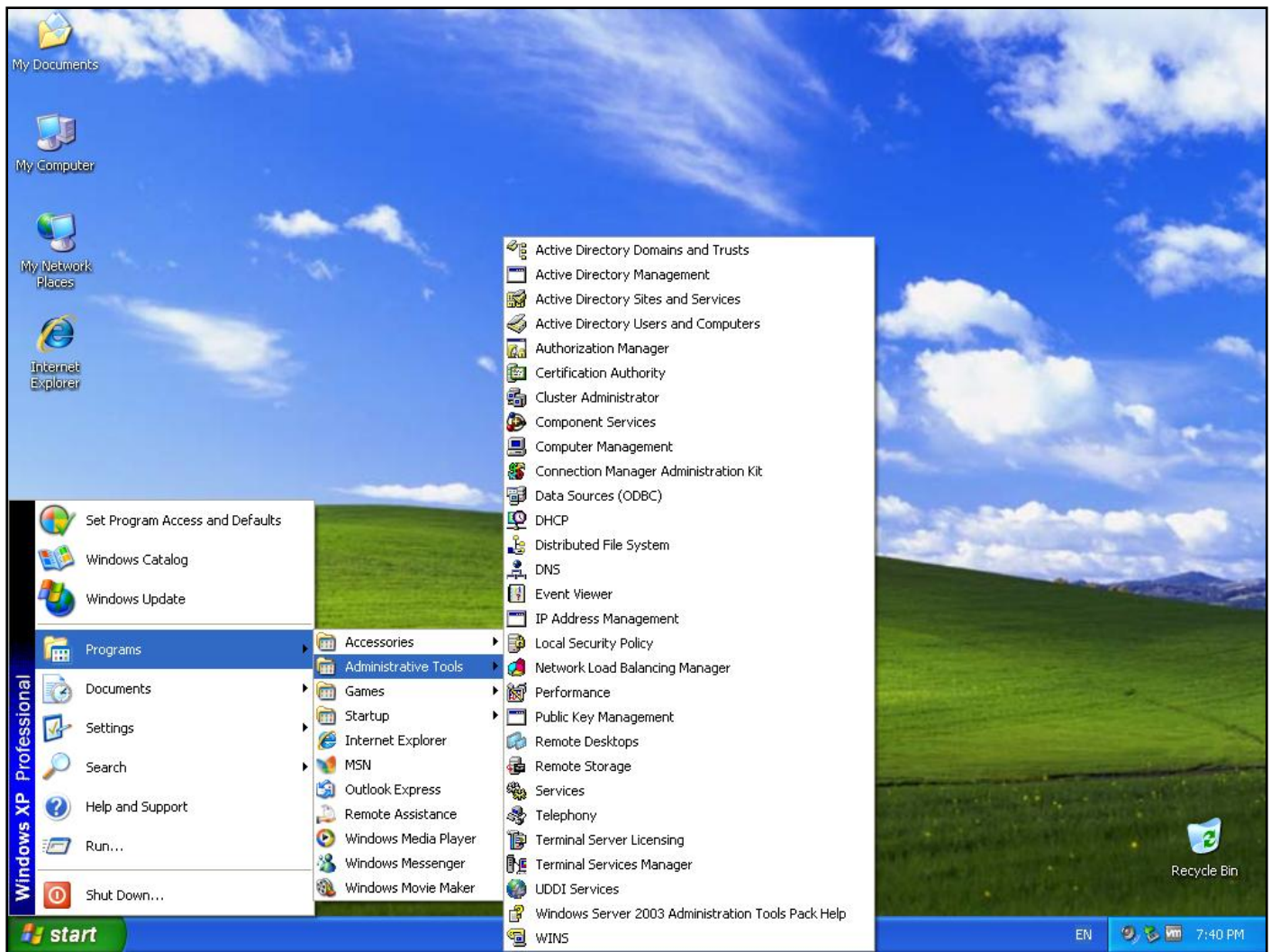
For Windows XP, 2003 this tool can be downloaded from <http://www.microsoft.com/en-au/download/details.aspx?id=6315>

For Windows 7, Windows 8, Windows 2008 this tool can be downloaded from <http://www.microsoft.com/en-us/download/details.aspx?id=7887>

For further details regarding the Microsoft Active Directory Administration Tools, refer to <http://support.microsoft.com/kb/304718>

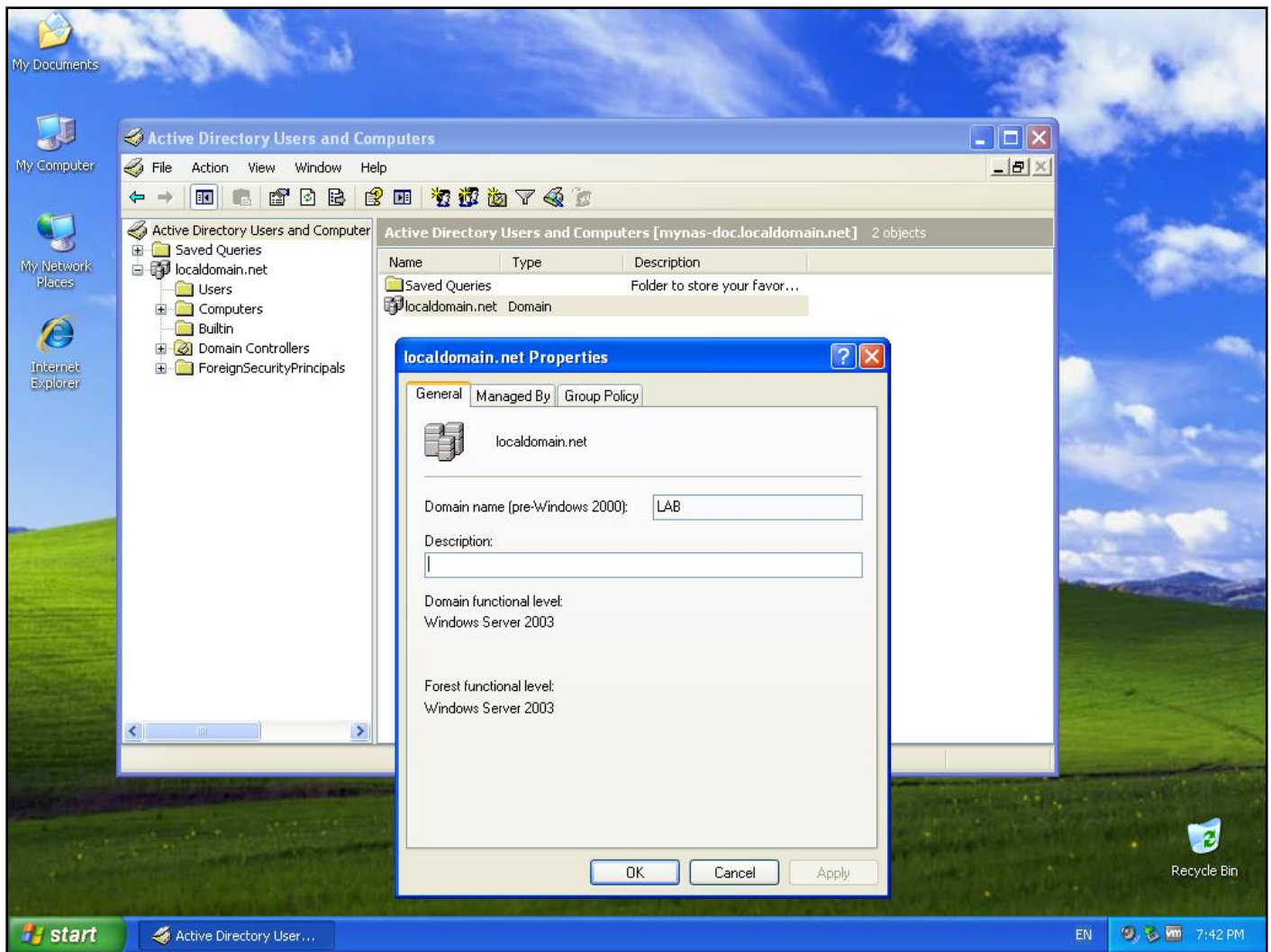
Once the appropriate tool has been identified, download and install the Administration Tools onto a system that is now joined to the domain.





Once the tools have been installed the following tools can be used to administer the Active Directory instance on MyNAS:

- Active Directory Users and Computers
- DNS

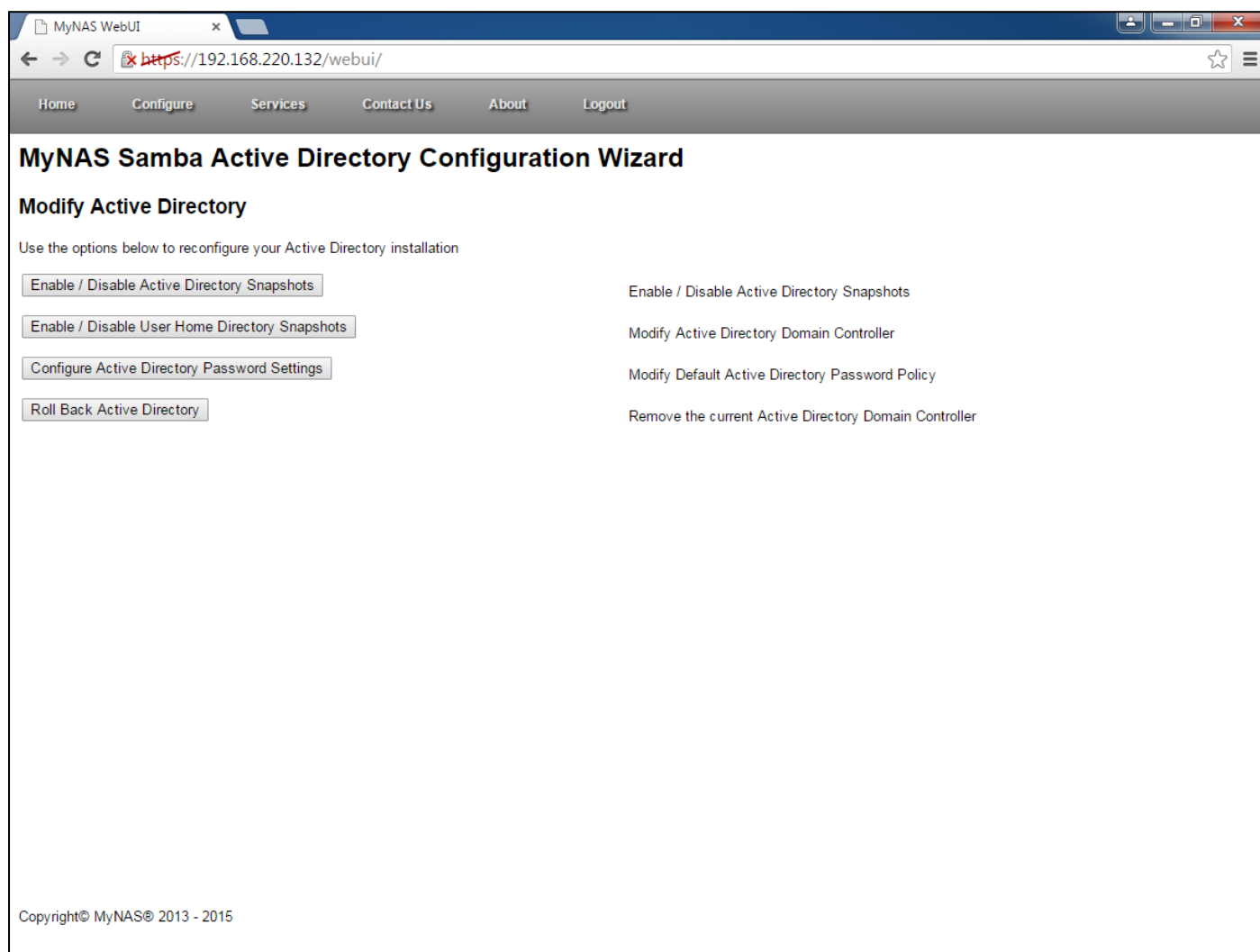


Any system that is capable of using Active Directory for authentication can now use your MyNAS Storage Appliance as their authentication source.

Modifying Active Directory

MyNAS provides the following for modifying the Active Directory installation:

- Enable / Disable Active Directory Snapshots
- Enable / Disable User Home Directory Snapshots
- Configure the Default Active Directory Password Policy
- Rolling back Active Directory



Enable / Disable Active Directory Snapshots

This allows for the re-configuration of snapshots against the Active Directory. If snapshots were not configured at installation time, they can be enabled here.

Enable / Disable User Home Directory Snapshots

By default, snapshotting of the User Home Directories does not occur. To change this behaviour, follow the prompts to configure snapshots for the user home directories.

Configure the Default Active Directory Password Policy

Currently, Samba does not support specific password policies as set via a Security Policy via GPO using the Active Directory Support Tools. MyNAS supports this by setting the domain password policies outside of the GPO.

When clicking on the 'Configure Default Active Directory Password Policy' button the following will be displayed:

The screenshot shows a web browser window with the address bar displaying 'https://192.168.220.132/webui/'. The page title is 'MyNAS Samba Active Directory Configuration Wizard'. The main heading is 'Modify Default Active Directory Password Policy'. Below this, a message states: 'Configure the default Active Directory password policy using the settings below:'. There are five settings, each with a dropdown menu:

- Password Complexity: on
- Minimum Password Length: 7
- Password History: 24
- Minimum Password Age: 1
- Maximum Password Age: 42

Below the settings is a section titled 'Password Policy Settings explained'. It contains a table with four rows:

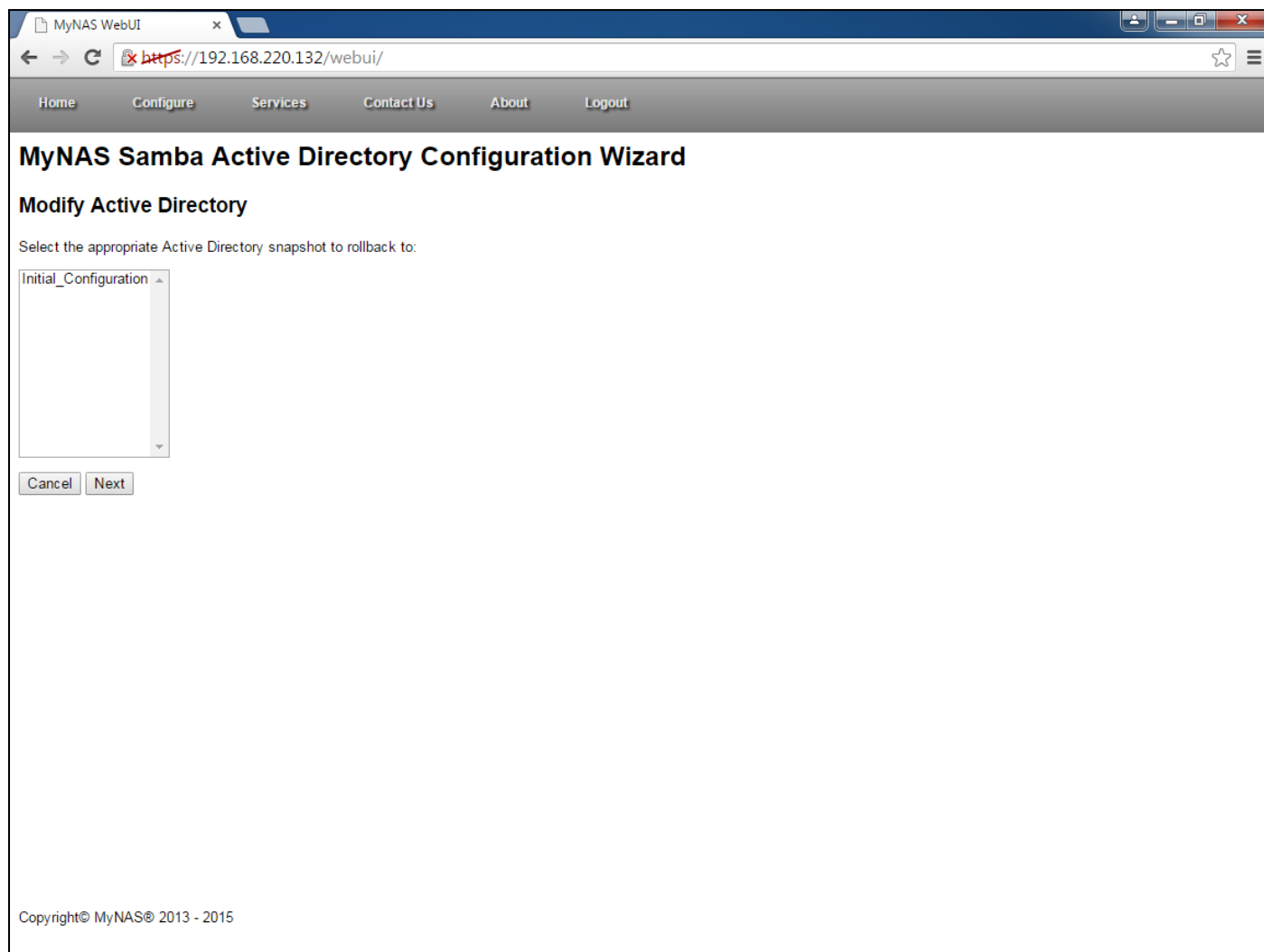
Password Complexity	<p>If this policy is enabled, passwords must meet the following minimum requirements:</p> <ul style="list-style-type: none"> Not contain the user's account name or parts of the user's full name that exceed two consecutive characters Be at least six characters in length Contain characters from three of the following four categories: <ul style="list-style-type: none"> English uppercase characters (A through Z) English lowercase characters (a through z) Base 10 digits (0 through 9) Non-alphabetic characters (for example, !, \$, #, %) Complexity requirements are enforced when passwords are changed or created. <p>Default: Enabled</p>
Minimum Password Length	<p>This security setting determines the least number of characters that a password for a user account may contain. You can set a value of between 1 and 14 characters, or you can establish that no password is required by setting the number of characters to 0.</p> <p>Default: 7</p>
Password History	<p>This security setting determines the number of unique new passwords that have to be associated with a user account before an old password can be reused. The value must be between 0 and 24 passwords.</p> <p>Default: 24</p>
Minimum Password Age	<p>This security setting determines the period of time (in days) that a password must be used before the user can change it. You can set a value between 1 and 998 days, or you can allow changes immediately by setting the number of days to 0.</p> <p>Default: 1</p>

At the bottom left of the page, it says 'Copyright© MyNAS® 2013 - 2015'.

Once the new Domain password policy is configured, click 'Next' to confirm the settings. Once confirmed, click the 'Confirmed' button, then Finish to set the new policy on the domain.

Rolling back Active Directory

When performing an Active Directory rollback, this utilises the automatic snapshots created for the Active Directory database as configured. If no snapshots are configured, an initial configuration snapshot will be generated by default to provide the capability to roll back to an Active Directory clean-state. When clicking on 'Roll back Active Directory' button, the following will be displayed:



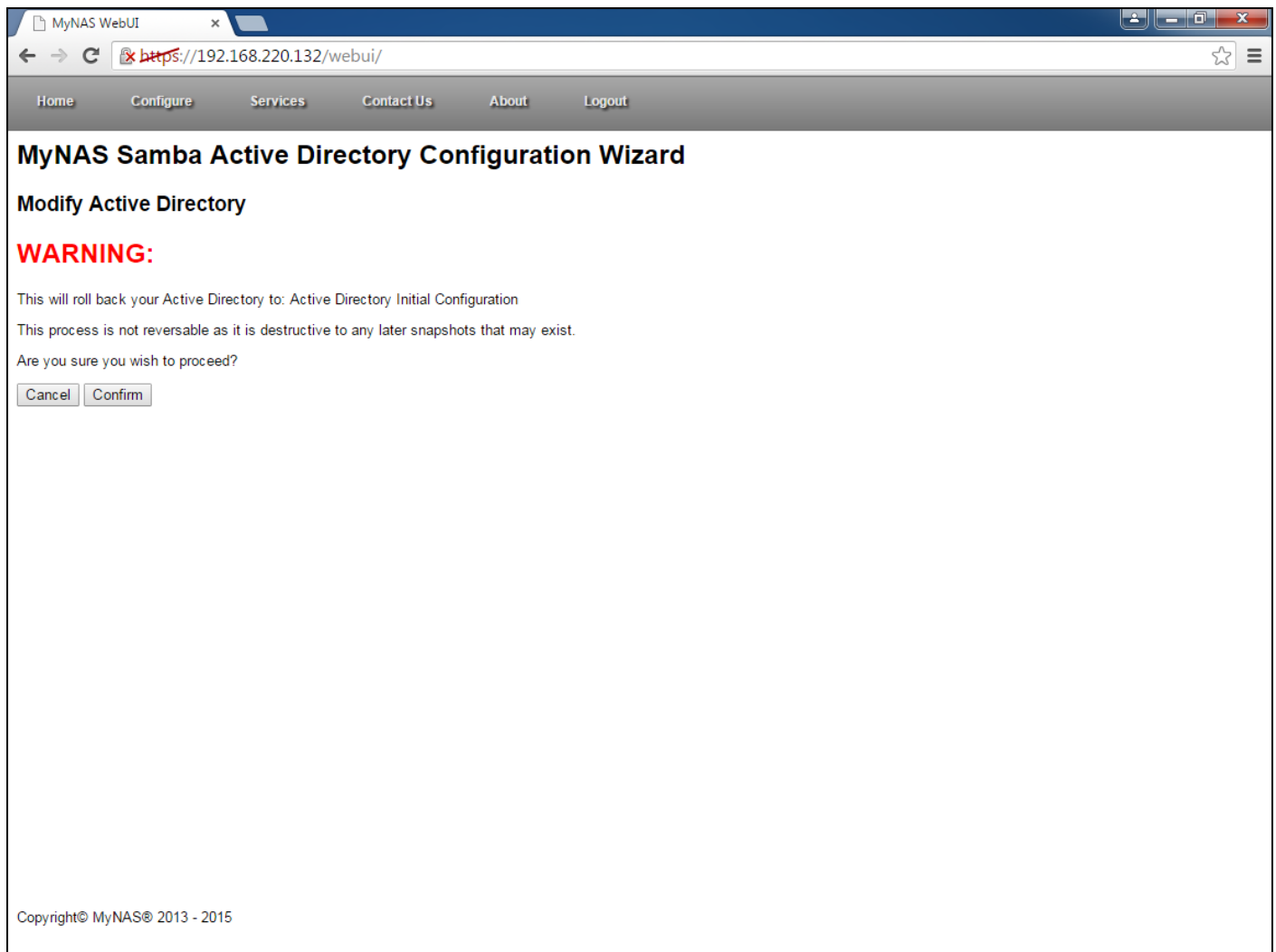
From the list of snapshots, select the snapshot to roll back to.

Note: Rolling back Active Directory to a specific snapshot is a destructive process. It will replace all the data in the Active Directory database, including any created user / group objects that do not exist in the snapshot being rolled back to. Any files or folder associated with those accounts may now be inaccessible until the permissions are resolved.

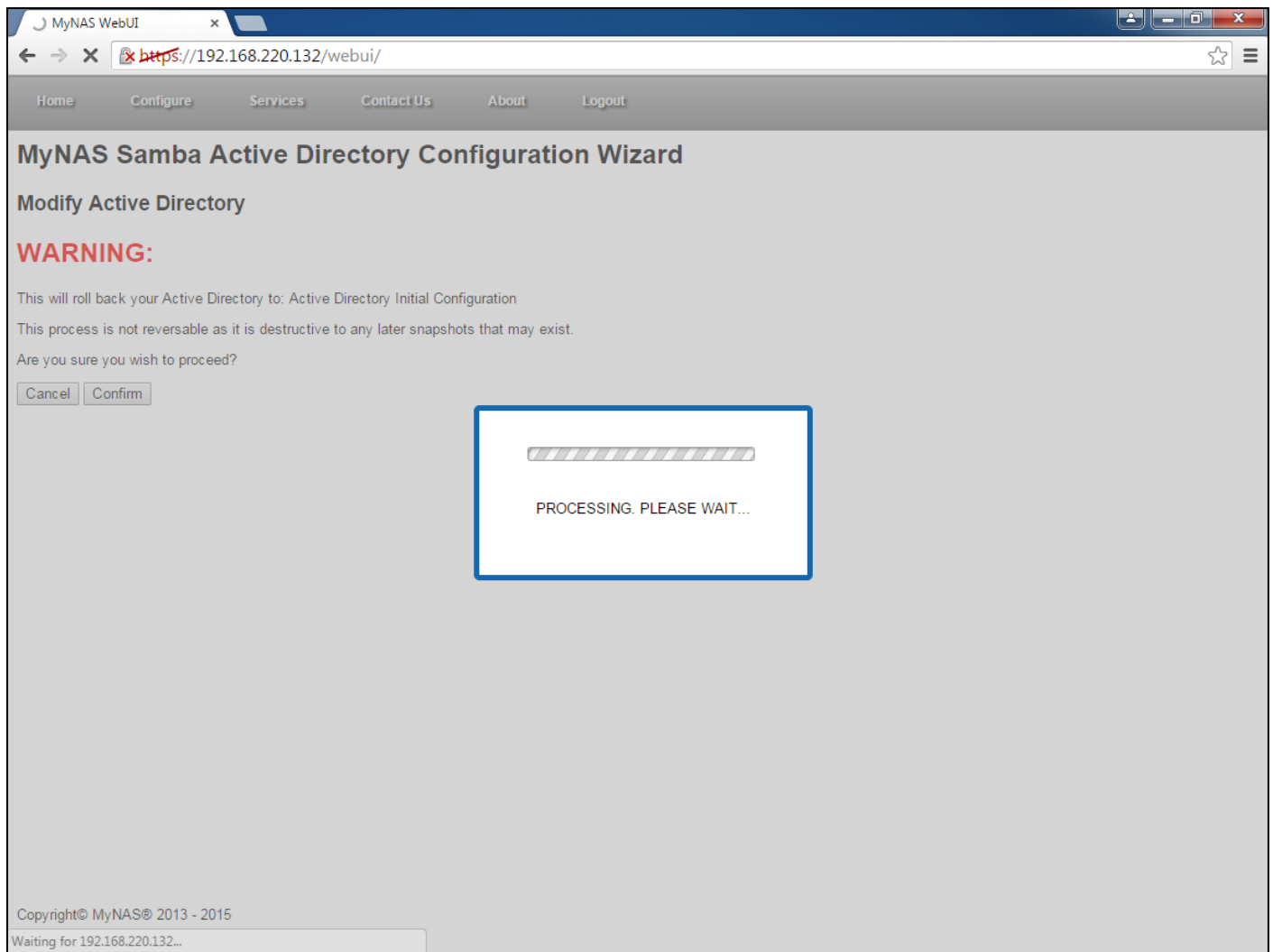
Note: All snapshots taken after the selected snapshot are also deleted. There is no roll-forward capability.

From the selection of snapshots, select the snapshot to roll-back to and click 'Next'

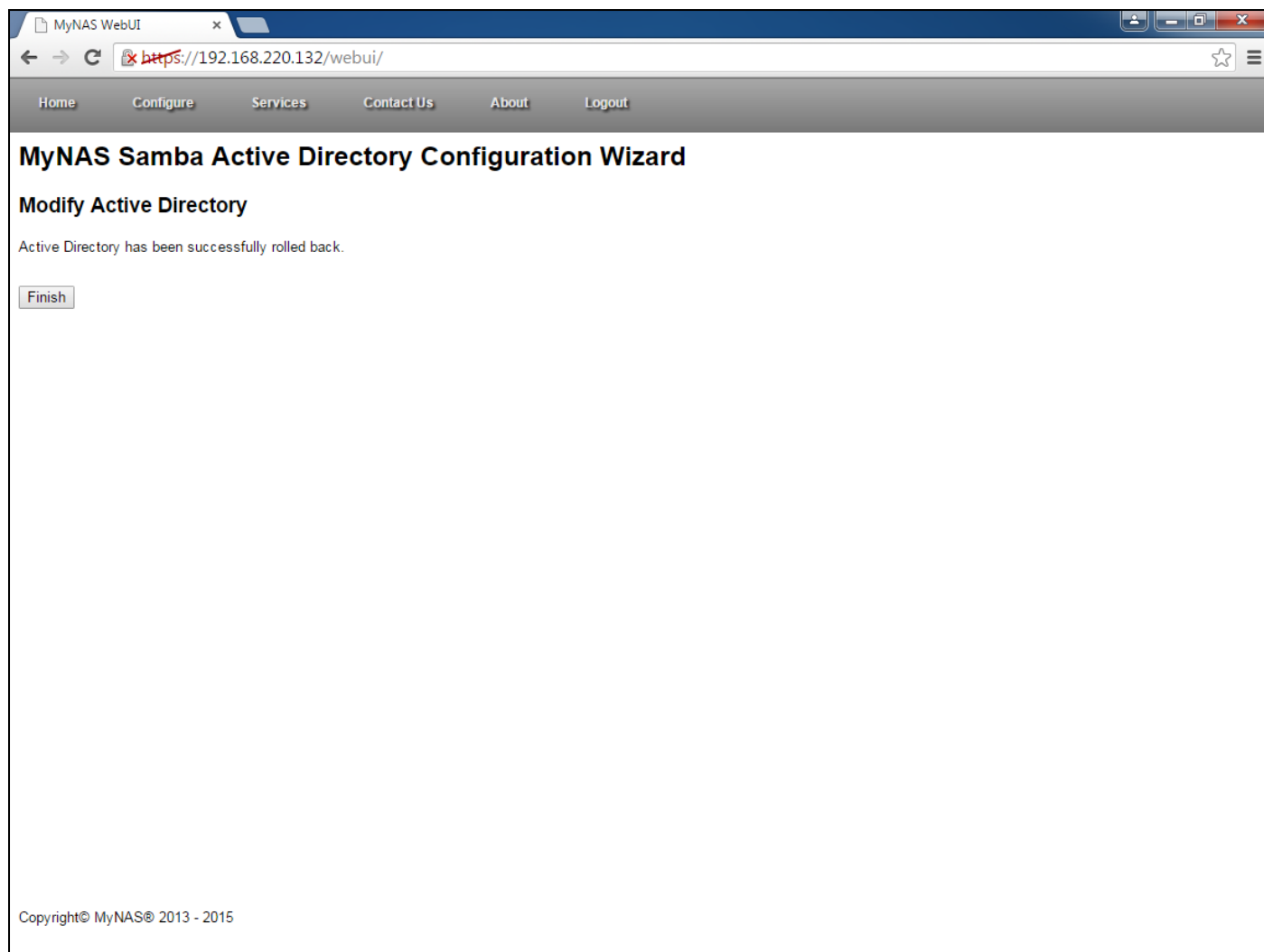
A warning will now be displayed detailing the destructive nature of the request and confirming the request to roll-back to the specific snapshot



To confirm the request, click 'Confirm'. MyNAS will now re-configure Active Directory to the selected snapshot and will restart the Samba Active Directory services.



Once the rollback is complete, the following will be displayed.

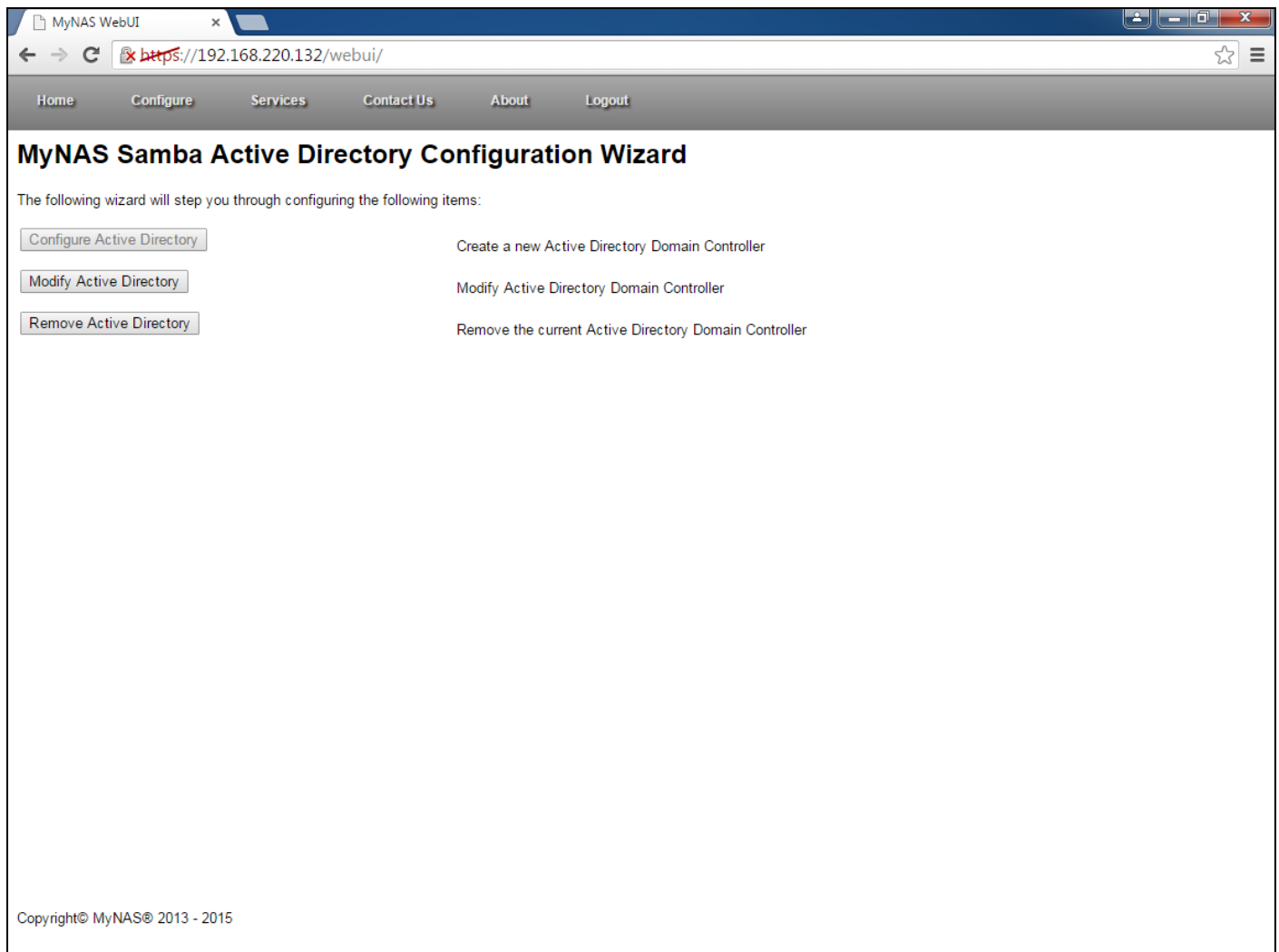


Click 'Finish' to complete the process.

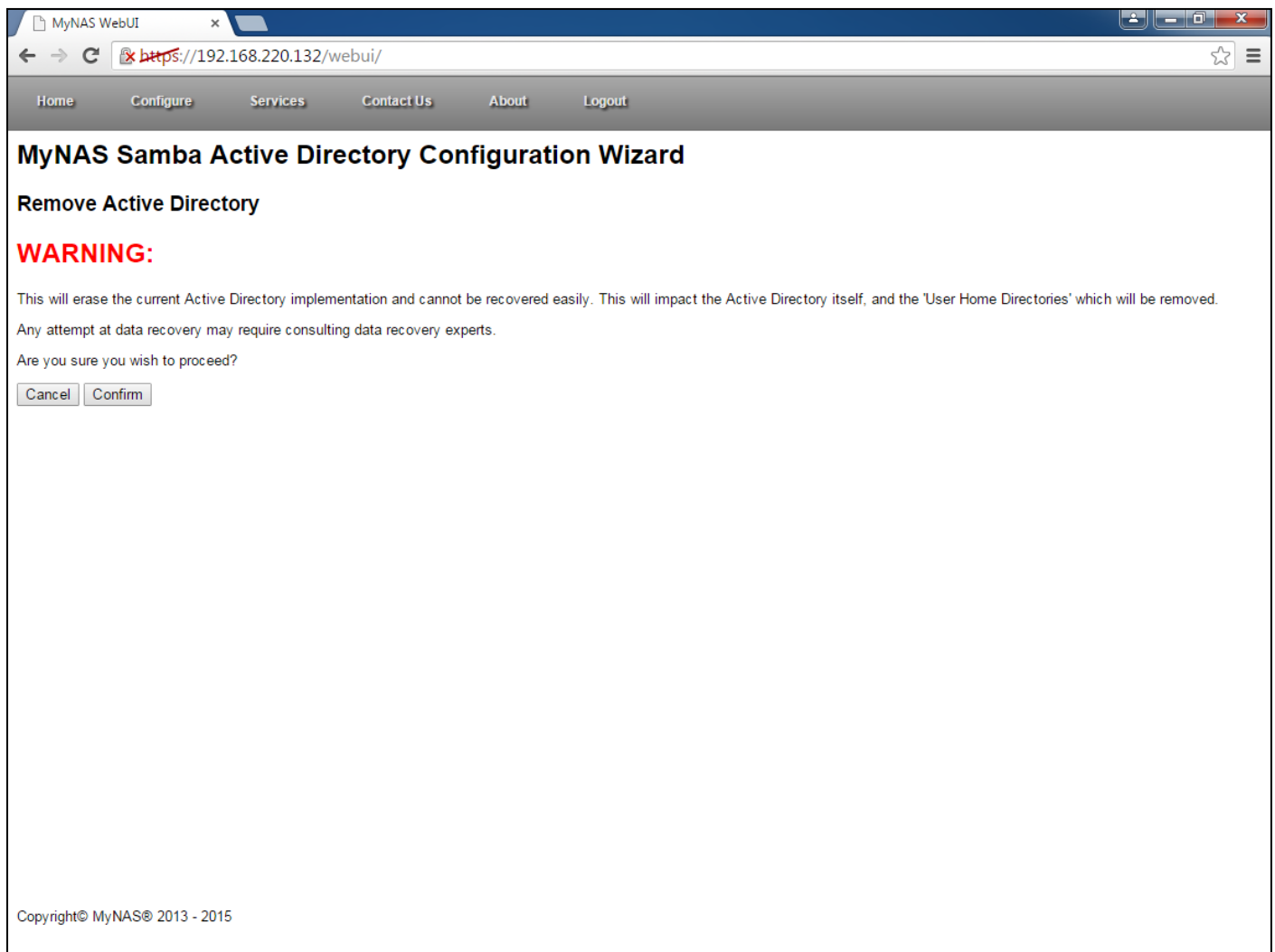
Deleting Active Directory

Deleting Active Directory is a destructive process. It will remove all data on the disks associated with Active Directory - mainly the Active Directory itself and the User Home Directories.

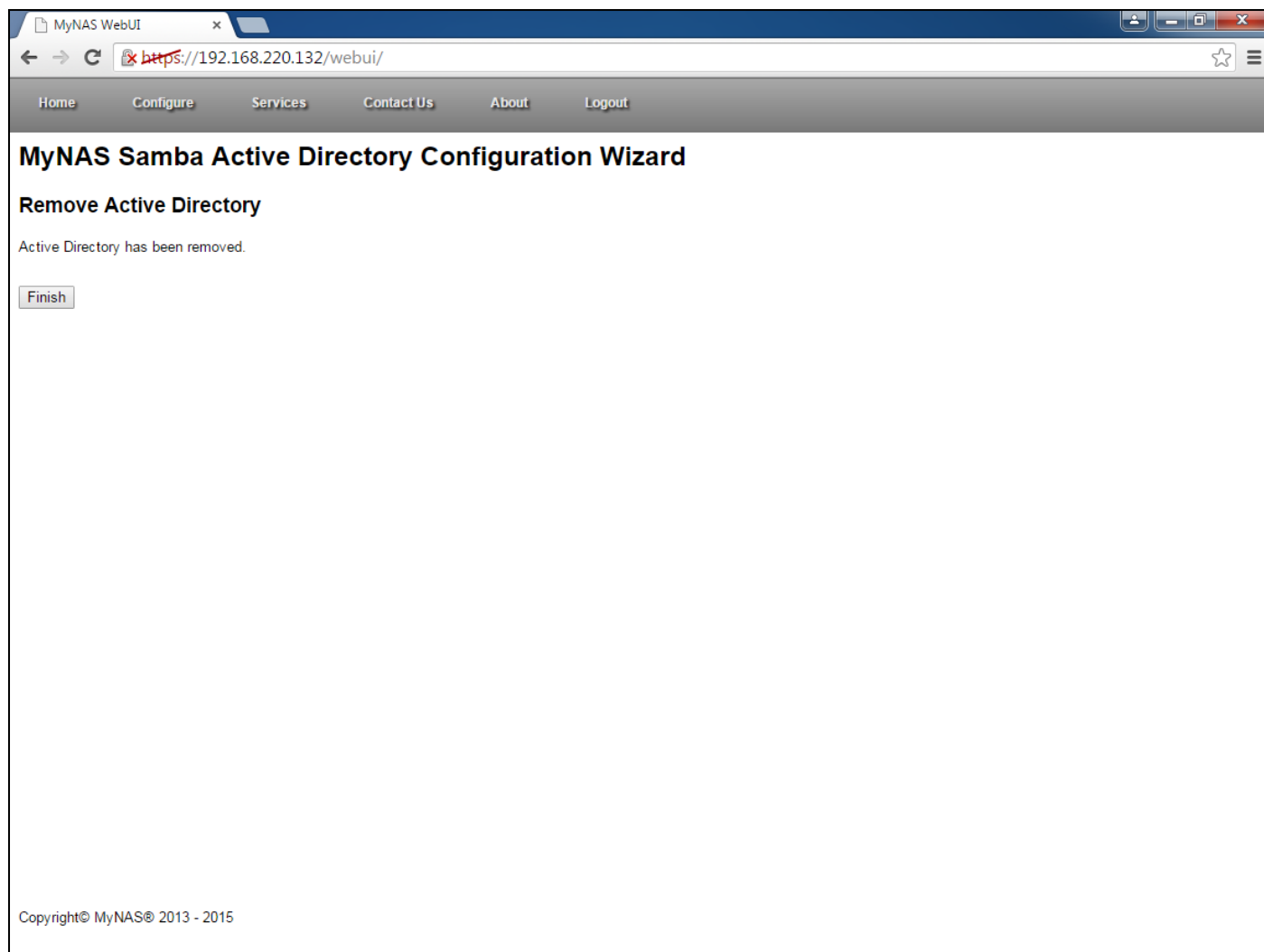
From the WebUI login page, login as the enable user. Click on the 'Configure' menu bar item, and select 'Configure Active Directory' to bring up the Configure Active Directory Configuration wizard. To remove Active Directory, click on the 'Remove Active Directory' button



A warning will be displayed detailing that this removal is a destructive process



To complete the removal, click the 'Confirm' button and MyNAS will remove Active Directory and re-configure the system to operate without Active Directory. Once Active Directory has been removed, the following will be displayed:



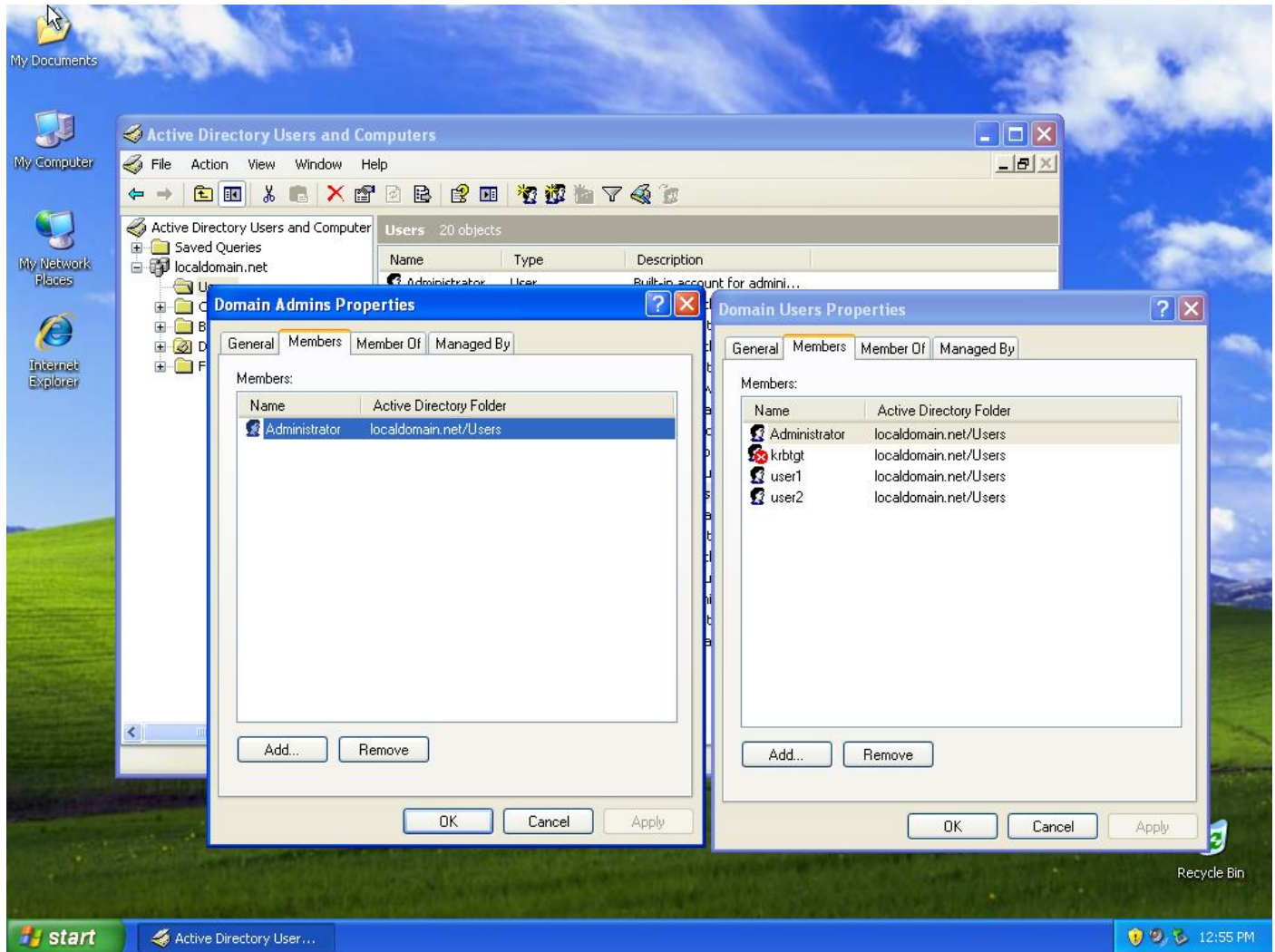
Click 'Finish' to complete the wizard.

Modifying a Data Share to use Advanced Permissions

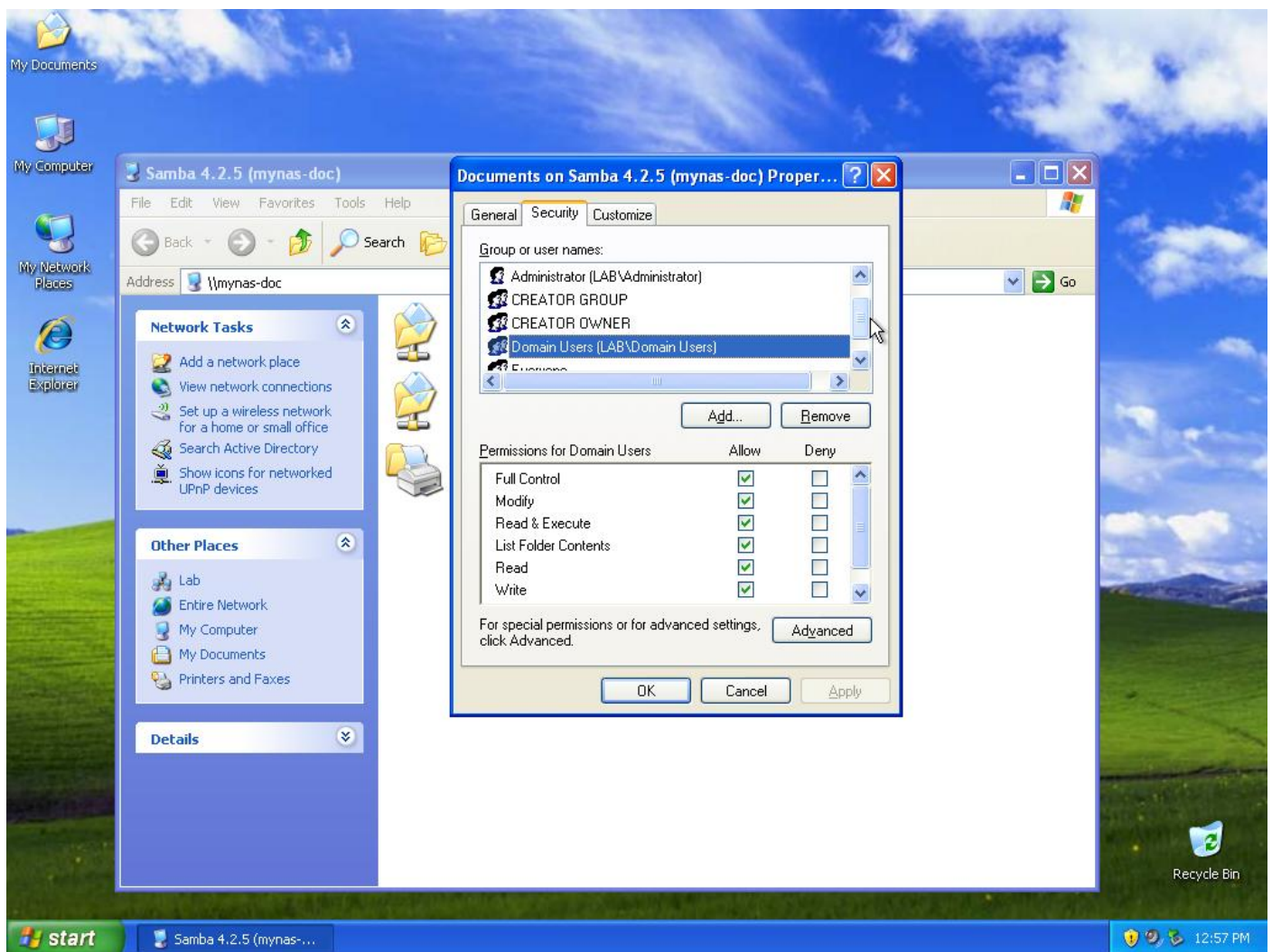
Once either local users & groups or Active Directory is configured, a Data Share will now be able to have additional security and permissions assigned to the specific share.

A Data Share can be configured with advanced permissions either at creation time, or after the Data Share has been created.

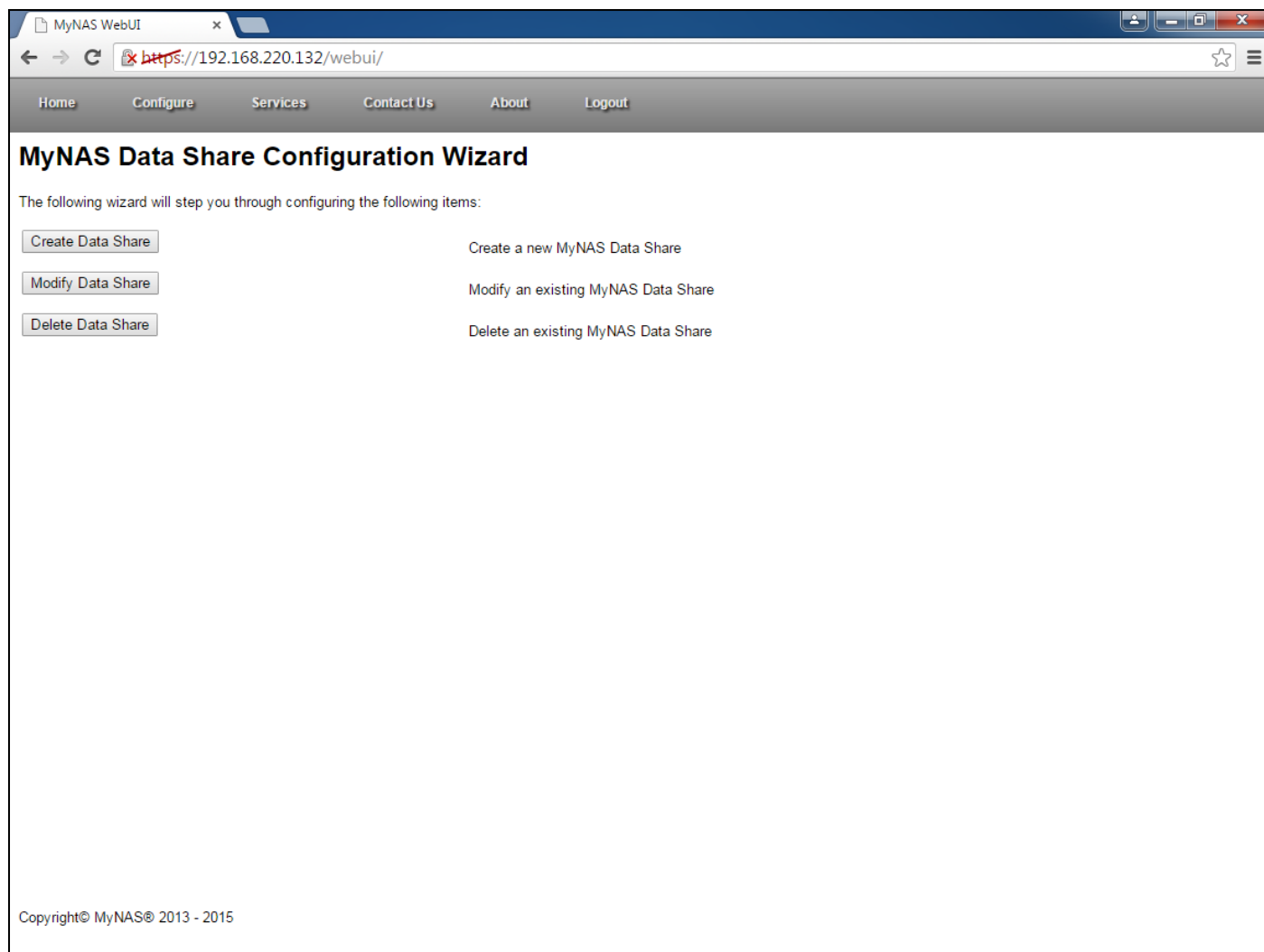
For the purpose of this section, Active Directory will be used, with the following configuration:



Initial folder permissions detailed below:

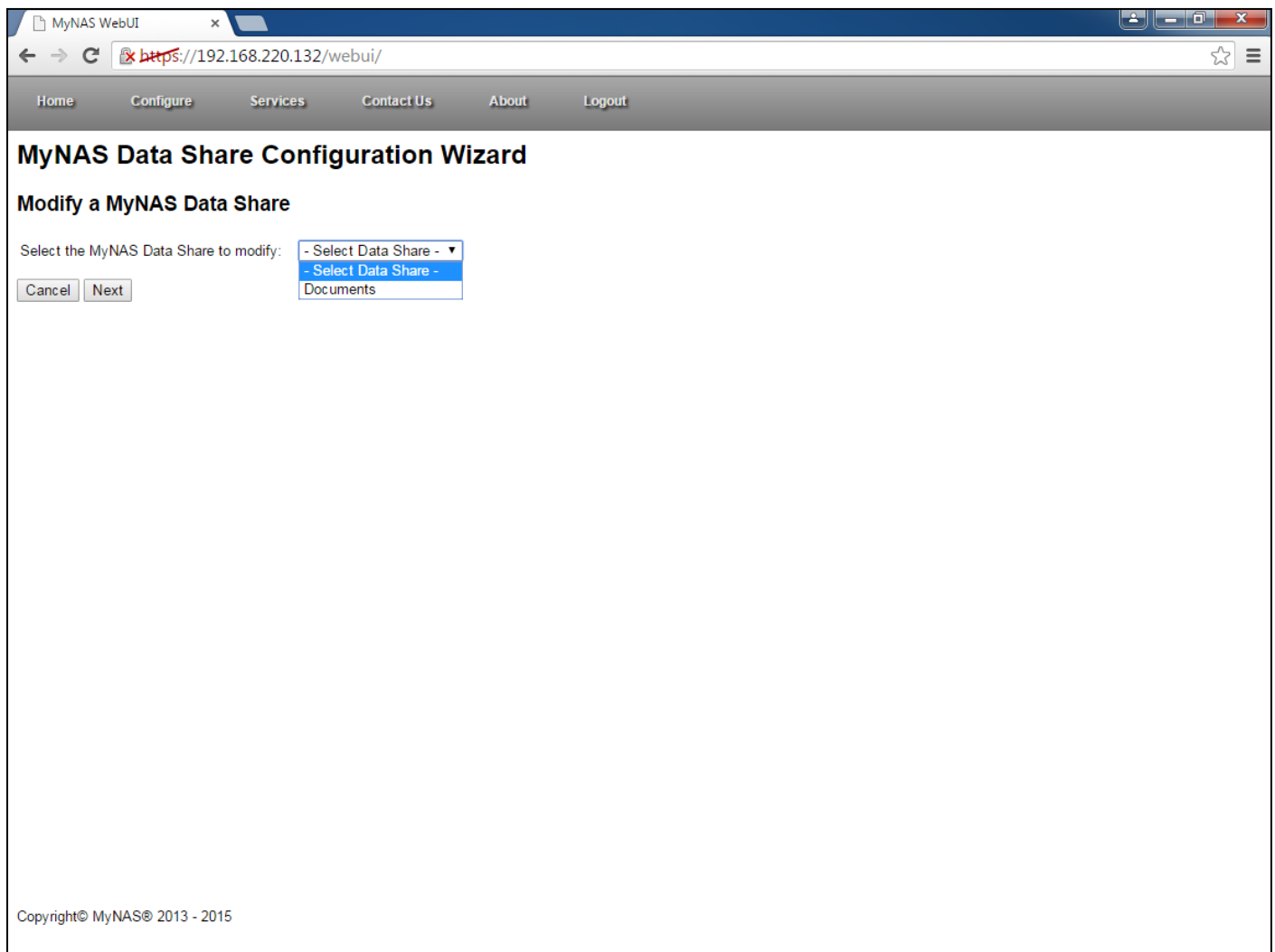


Login to the WebUI as the enable user, and from the Configure menu item, select 'Configure Data Shares'. Once selected, the following will be displayed:



To modify a Data Share, click the 'Modify Data Share' button.

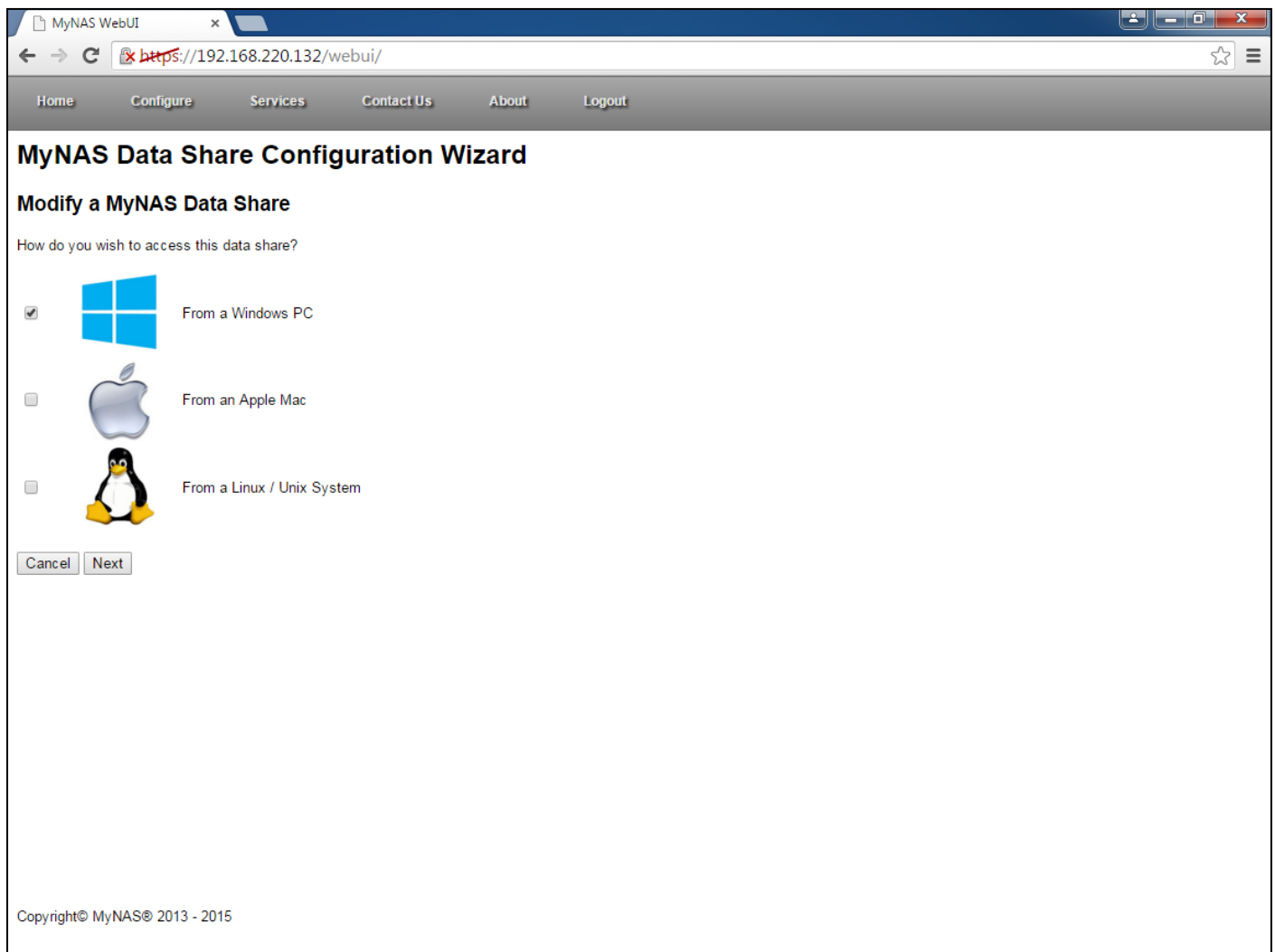
Select the Data Share which you wish to modify



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled 'MyNAS WebUI'. The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled 'MyNAS Data Share Configuration Wizard' and 'Modify a MyNAS Data Share'. Below this, it says 'Select the MyNAS Data Share to modify:' followed by a dropdown menu. The dropdown menu is open, showing the option 'Documents' selected. There are 'Cancel' and 'Next' buttons below the dropdown. At the bottom left, there is a copyright notice: 'Copyright© MyNAS® 2013 - 2015'.

Click 'Next' once the appropriate data share is selected. Click 'Next' to bypass modification of the share name and comment if no change there is required.

If you require to change the data share access, make the appropriate changes, otherwise click 'Next'



The screenshot shows a web browser window with the address bar displaying `https://192.168.220.132/webui/`. The browser tab is labeled 'MyNAS WebUI'. The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled 'MyNAS Data Share Configuration Wizard' and contains the section 'Modify a MyNAS Data Share'. Below this, a question asks 'How do you wish to access this data share?'. There are three options, each with a checkbox and an icon: 'From a Windows PC' (checked, with a Windows logo icon), 'From an Apple Mac' (unchecked, with an Apple logo icon), and 'From a Linux / Unix System' (unchecked, with a Tux penguin icon). At the bottom of the options are 'Cancel' and 'Next' buttons. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

MyNAS WebUI


`https://192.168.220.132/webui/`


Home Configure Services Contact Us About Logout


MyNAS Data Share Configuration Wizard

Modify a MyNAS Data Share

How do you wish to access this data share?

☒  From a Windows PC

☐  From an Apple Mac

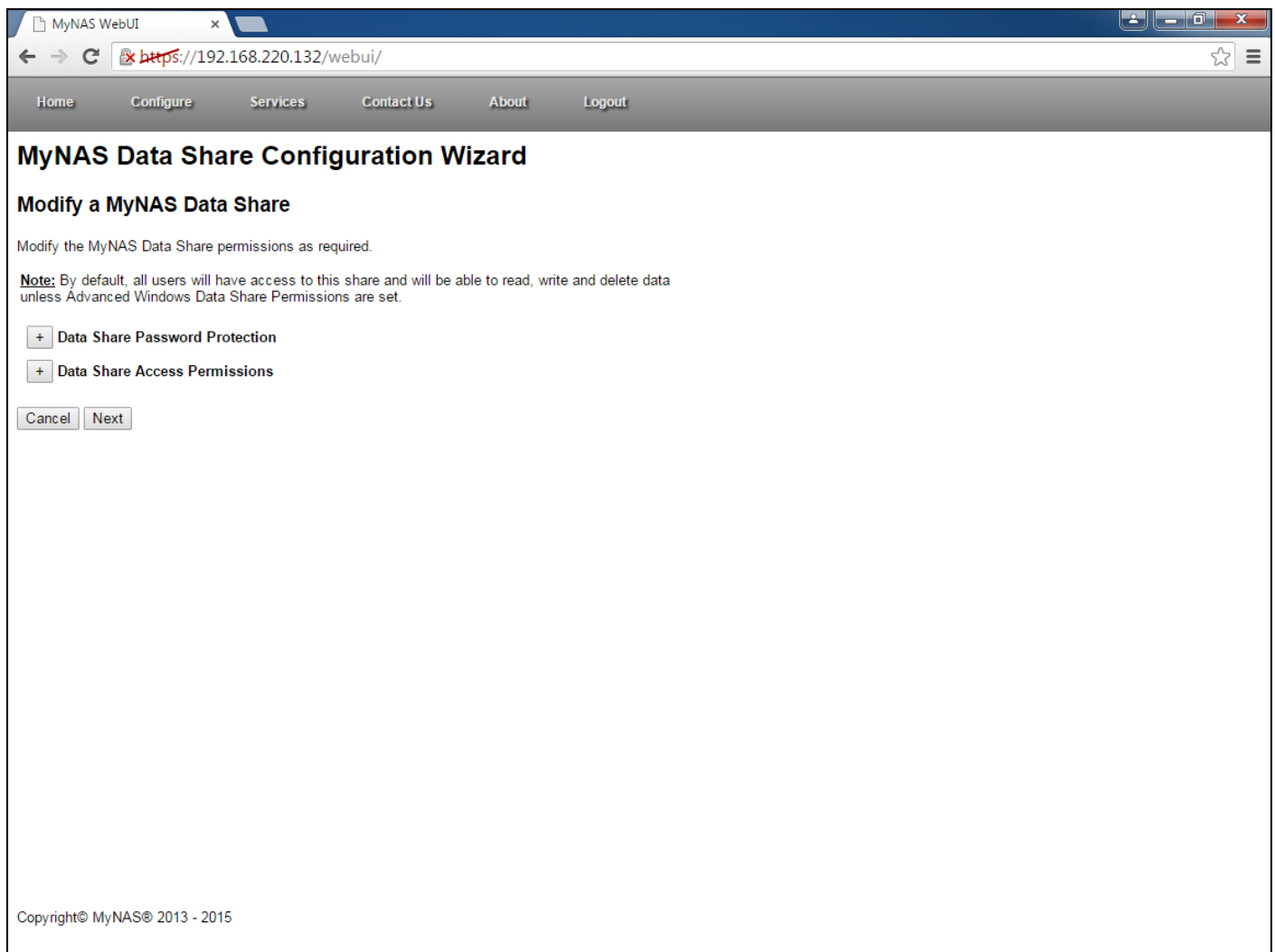
☐  From a Linux / Unix System

Cancel Next

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The next page details the advanced permissions that can be applied to a share. These are:

- Specific user or group access
- Individual user or group access for read / write control



To apply permissions, click on the '+' button to expand the applicable section.

For applying permissions, the following will be applied to this Data Share:

MyNAS WebUI

Home Configure Services Contact Us About Logout

Modify a MyNAS Data Share

Modify the MyNAS Data Share permissions as required.

Note: By default, all users will have access to this share and will be able to read, write and delete data unless Advanced Windows Data Share Permissions are set.

☒ Data Share Password Protection

☐ Data Share Access Permissions

MyNAS Users

administrator
user1
user2

MyNAS Users Read Only Access

guest

MyNAS Users Write Access

user1

MyNAS Groups

domain guests
enterprise admins
enterprise read-only domain controllers
group policy creator owners
read-only domain controllers

MyNAS Groups Read Only Access

domain users

MyNAS Groups Write Access

domain admins

Cancel Next

Copyright© MyNAS® 2013 - 2015

Click 'Next' to continue.

Complete any further modifications of the Data Share if required.

Confirm all the settings are as per required

MyNAS WebUI x

← → ↻ ~~https://~~192.168.220.132/webui/ ☆ ≡

Home Configure Services Contact Us About Logout

MyNAS Data Share Configuration Wizard

Modify a MyNAS Data Share

The following settings have been requested for the modification of an existing MyNAS Data Share. Please confirm the requested items below:

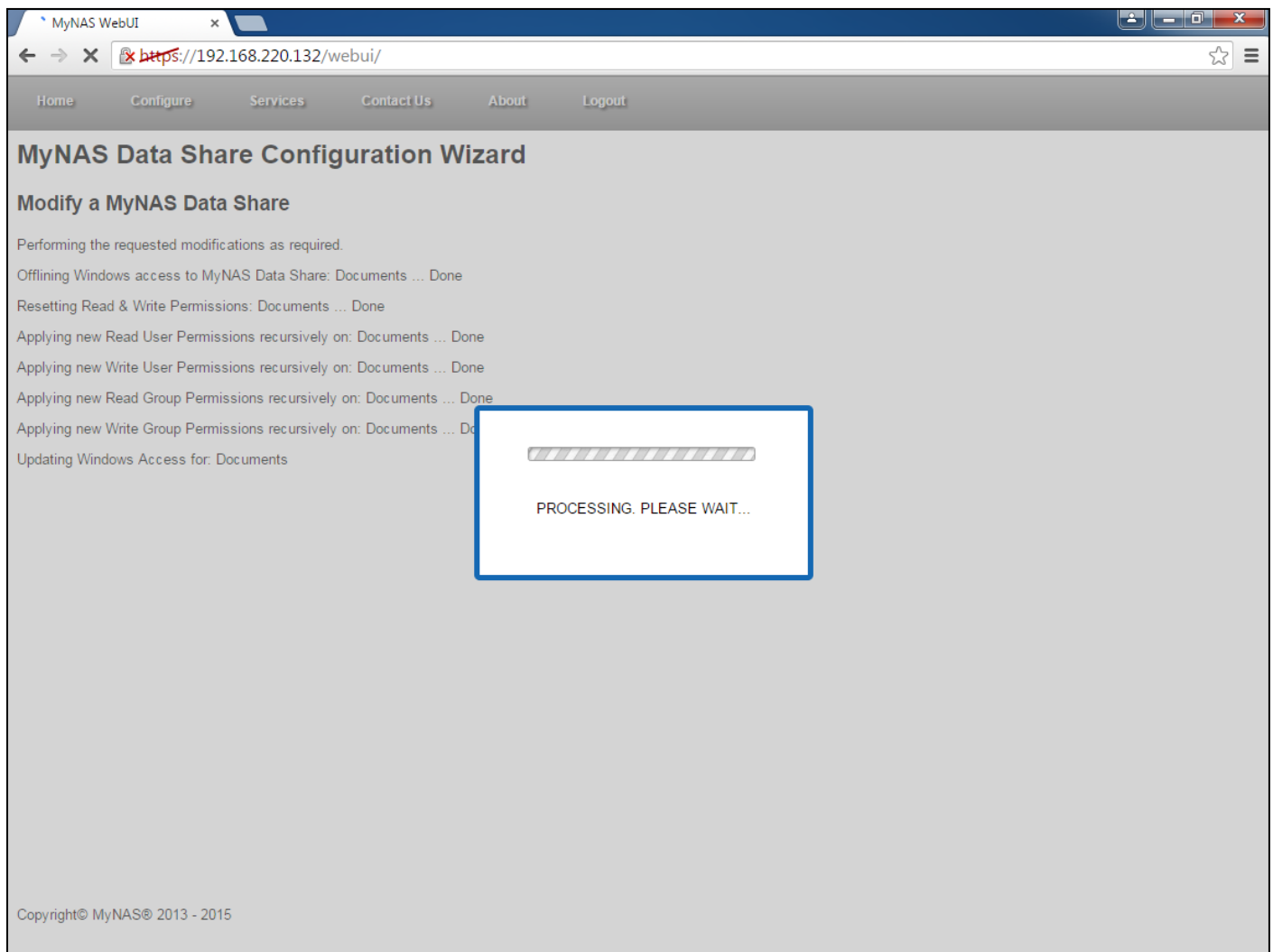
Modified Data Share Name:	Documents
Modified Data Share Comment:	No data share comment entered.
Modified Data Share Platform Access:	Windows: Yes Apple / OS X: No Linux / Unix: No
Modified Windows Data Share Password Protected:	No
Modified Windows Data Share Access Permissions:	User Access (Read Only): guest User Access (Read, Write, Delete): user1 Group Access (Read Only): domain users Group Access (Read, Write, Delete): domain admins
Modified Data Share Data Importance:	Low
Modified Data Share DLNA Access:	No
Modified Data Share Snapshots:	No
Modified Local ownCloud Access:	No

Cancel Save Settings

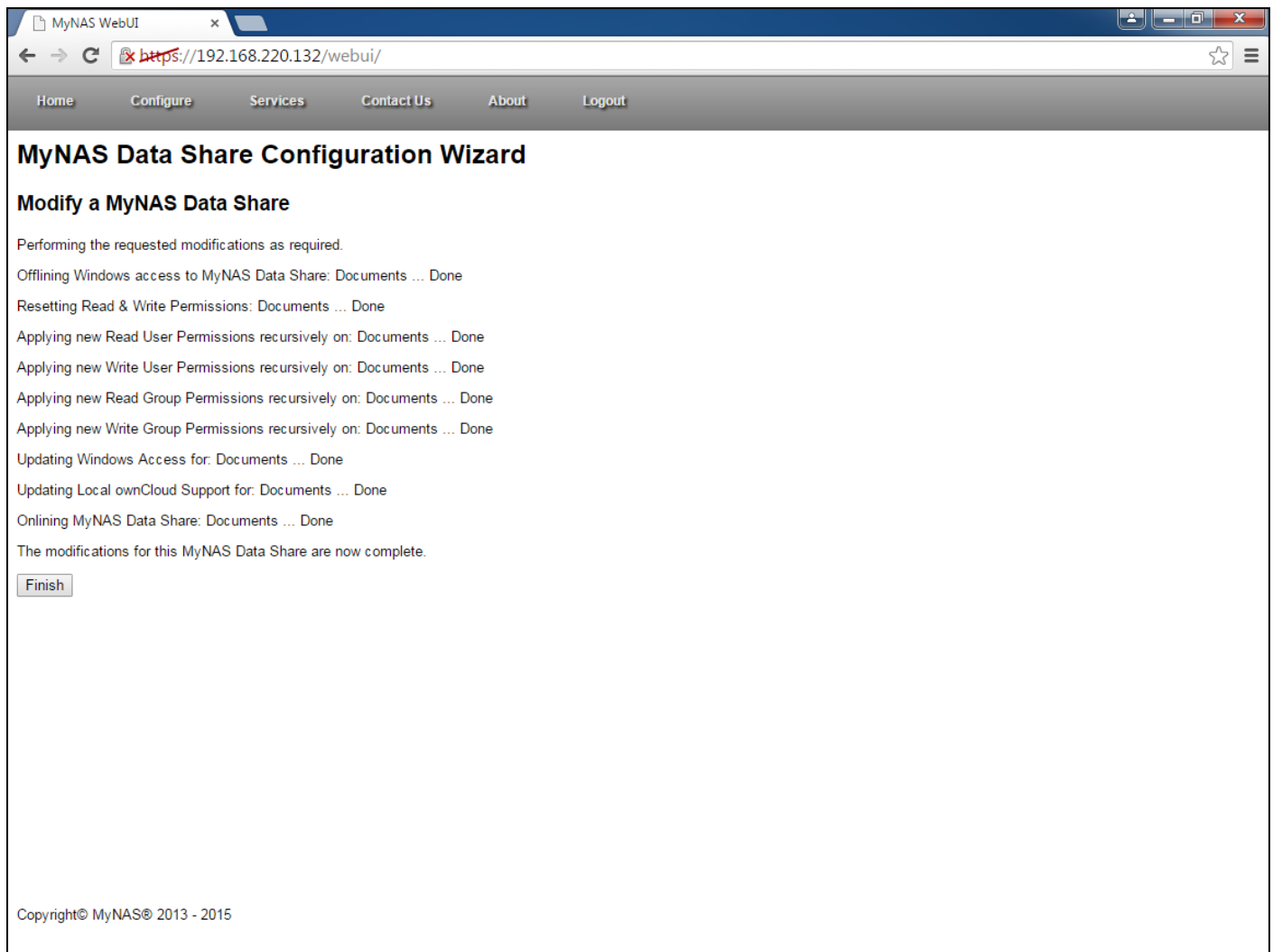
Copyright© MyNAS® 2013 - 2015

If all the permissions are OK, click 'Save Settings'

MyNAS will now process the changes as requested to the Data Share

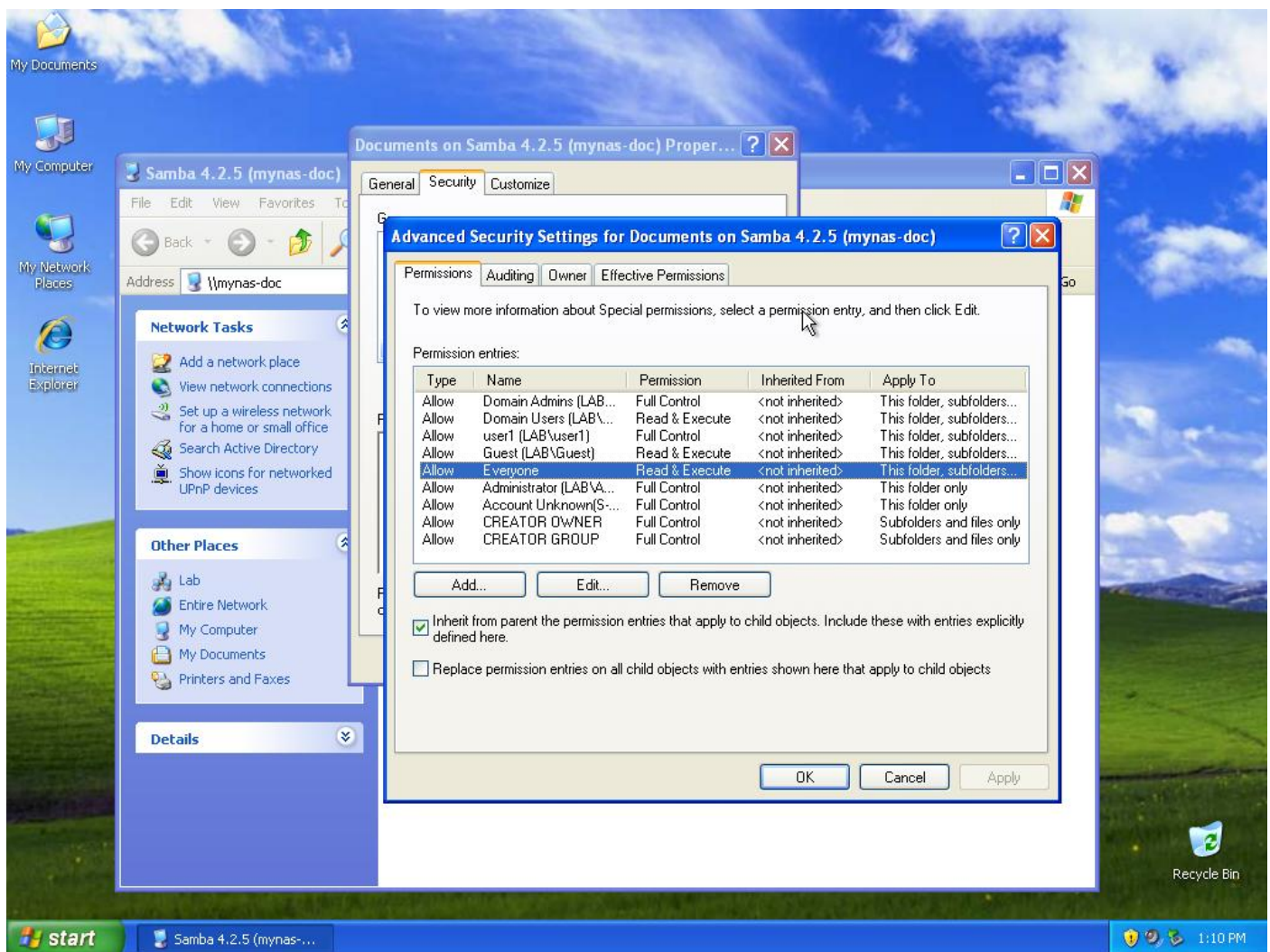


Once the changes are complete the following will be displayed:



Click 'Finish' to complete the process.

Validate the applied share permissions via a Windows system connected to the Active Directory domain:

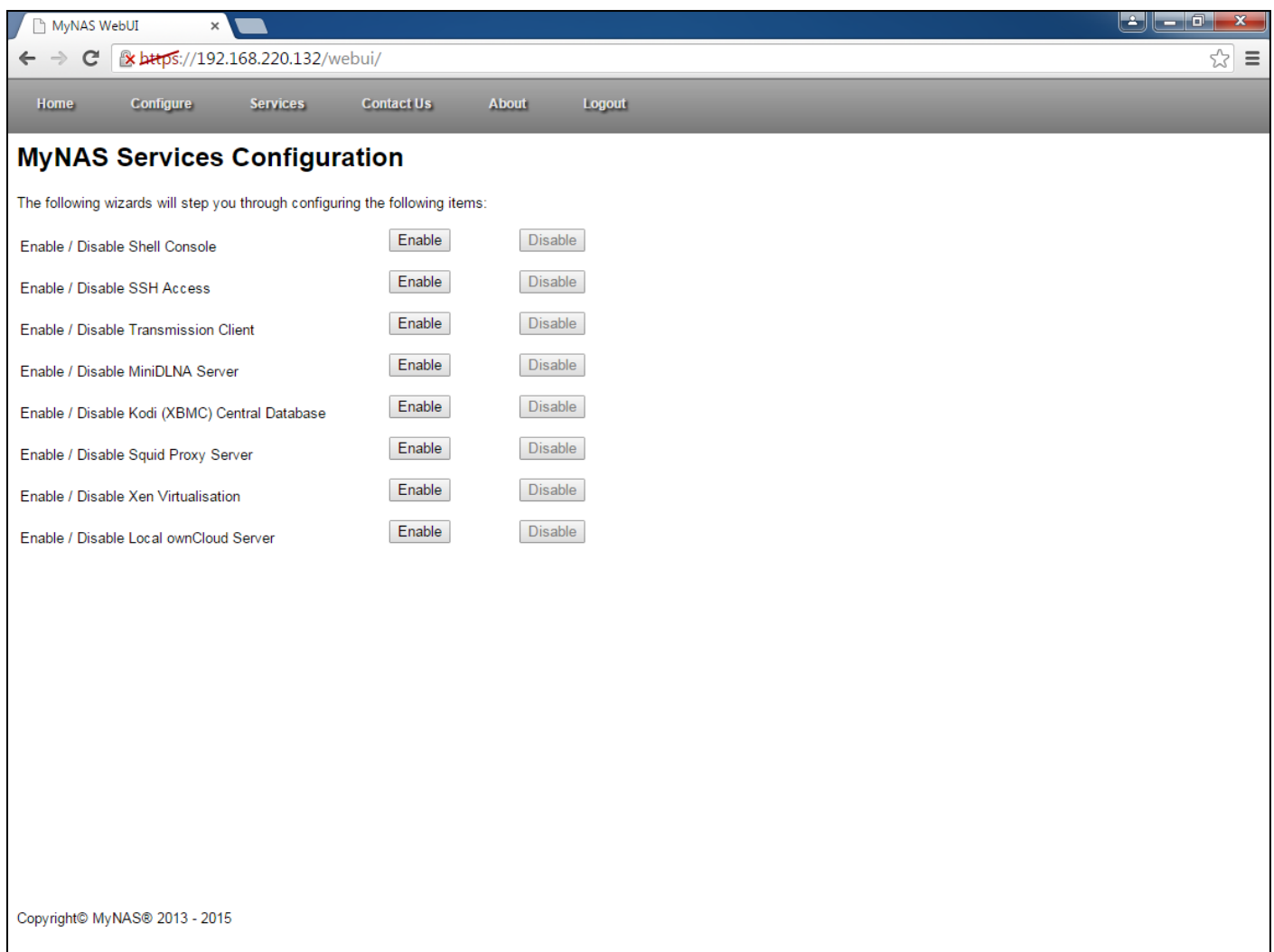


Configuring Additional MyNAS System Services

MyNAS also provides the following functionality:

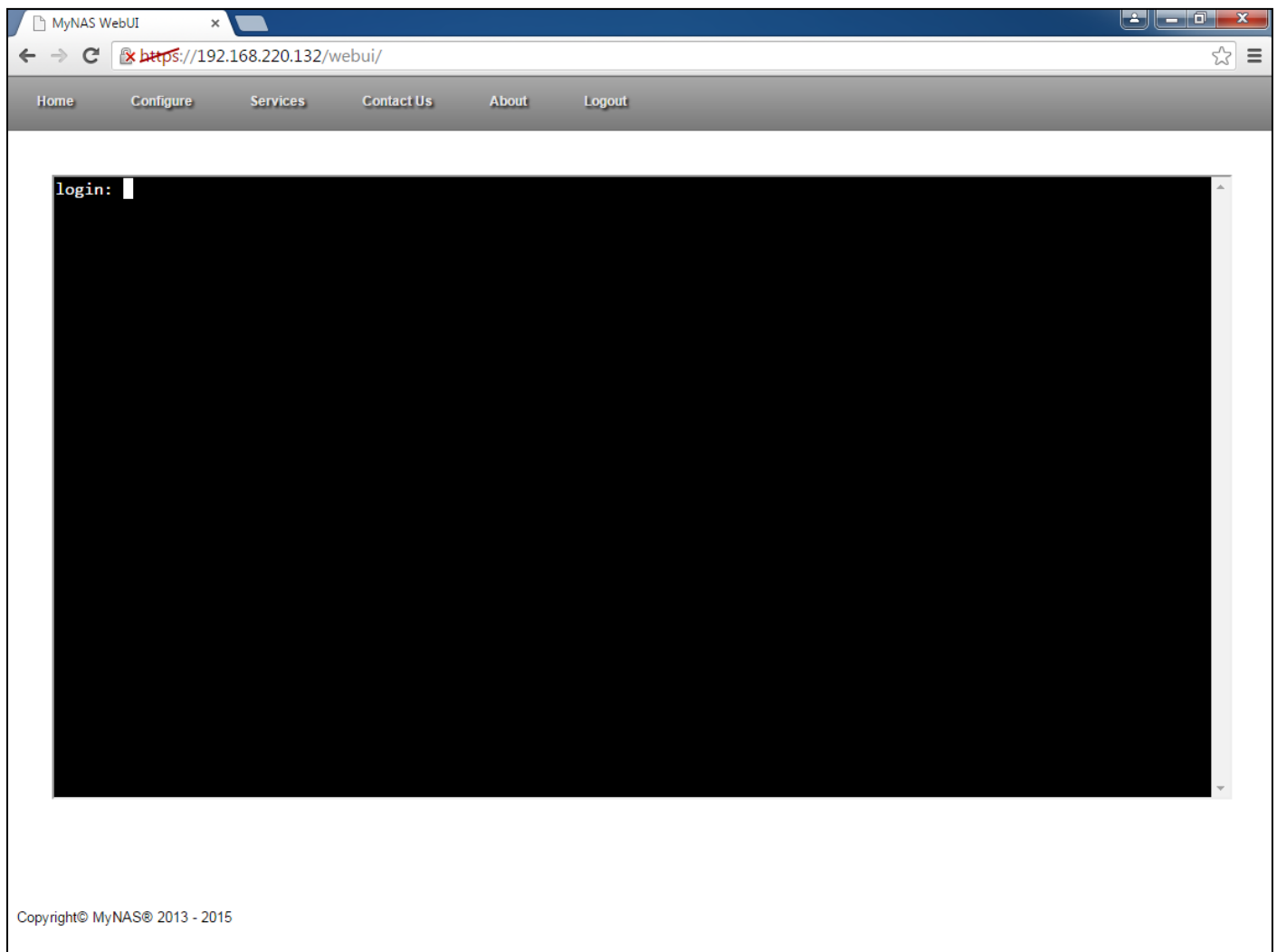
- Embedded shell console
- Embedded BitTorrent Client
- SSH Access
- DLNA Server
- XBMC Central Database
- Squid Proxy Server
- Xen Virtualisation
- Local ownCloud Server

To configure any of these additional services, login to the WebUI as the enable user, and from the Configure menu item, select 'Configure System Services'. Once selected, the following will be displayed:



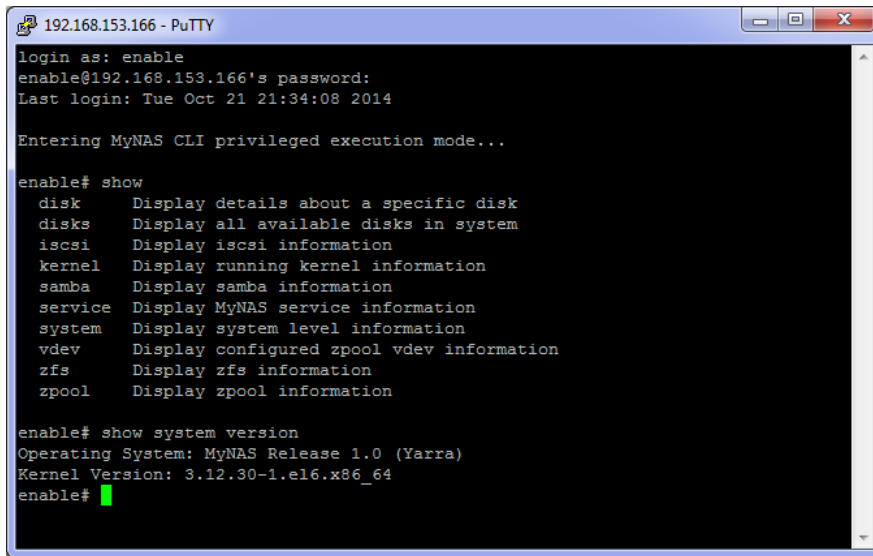
Enable / Disable Shell Console

From the WebUI, simply click the appropriate button to Enable / Disable the Shell Console. Once enabled, click on the 'Services' menu, then 'Shell Console' to bring up the fully functional shell console.



Enable / Disable SSH Access

From the WebUI, simply click the appropriate button to Enable / Disable the SSH Access. Once enabled, you will be able to use a SSH Client to access the CLI of MyNAS:



The screenshot shows a PuTTY terminal window titled "192.168.153.166 - PuTTY". The terminal displays the following text:

```
login as: enable
enable@192.168.153.166's password:
Last login: Tue Oct 21 21:34:08 2014

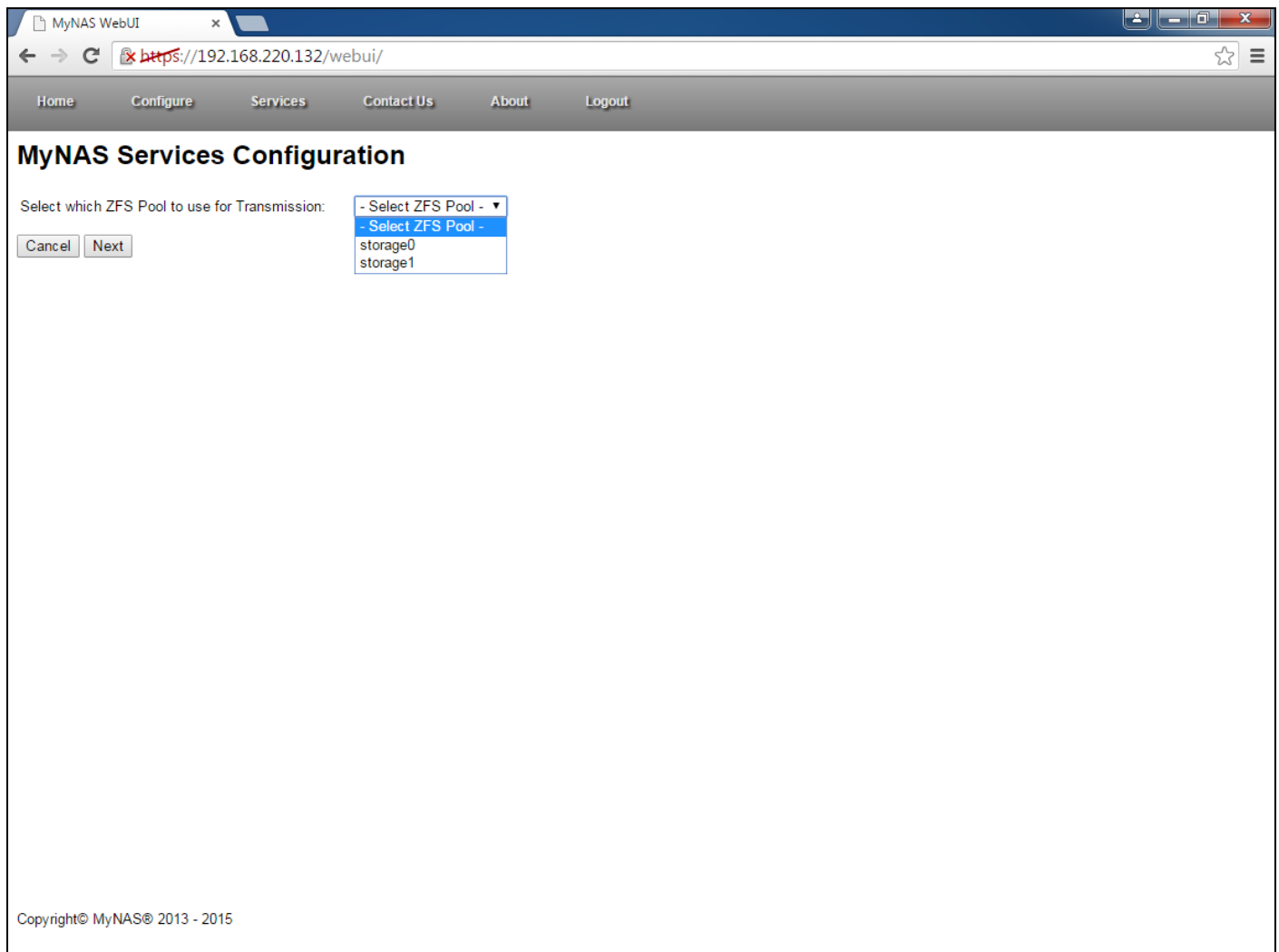
Entering MyNAS CLI privileged execution mode...

enable# show
  disk      Display details about a specific disk
  disks     Display all available disks in system
  iscsi     Display iscsi information
  kernel    Display running kernel information
  samba     Display samba information
  service   Display MyNAS service information
  system    Display system level information
  vdev      Display configured zpool vdev information
  zfs       Display zfs information
  zpool     Display zpool information

enable# show system version
Operating System: MyNAS Release 1.0 (Yarra)
Kernel Version: 3.12.30-1.el6.x86_64
enable#
```

Enable / Disable BitTorrent Client

From the WebUI, simply click the appropriate button to Enable / Disable the Transmission Client. Depending on the ZFS Pool configuration, if there are more than 1 ZFS Pool configured, MyNAS will ask which ZFS Pool should be used for the Transmission data:



MyNAS WebUI

Home Configure Services Contact Us About Logout

MyNAS Services Configuration

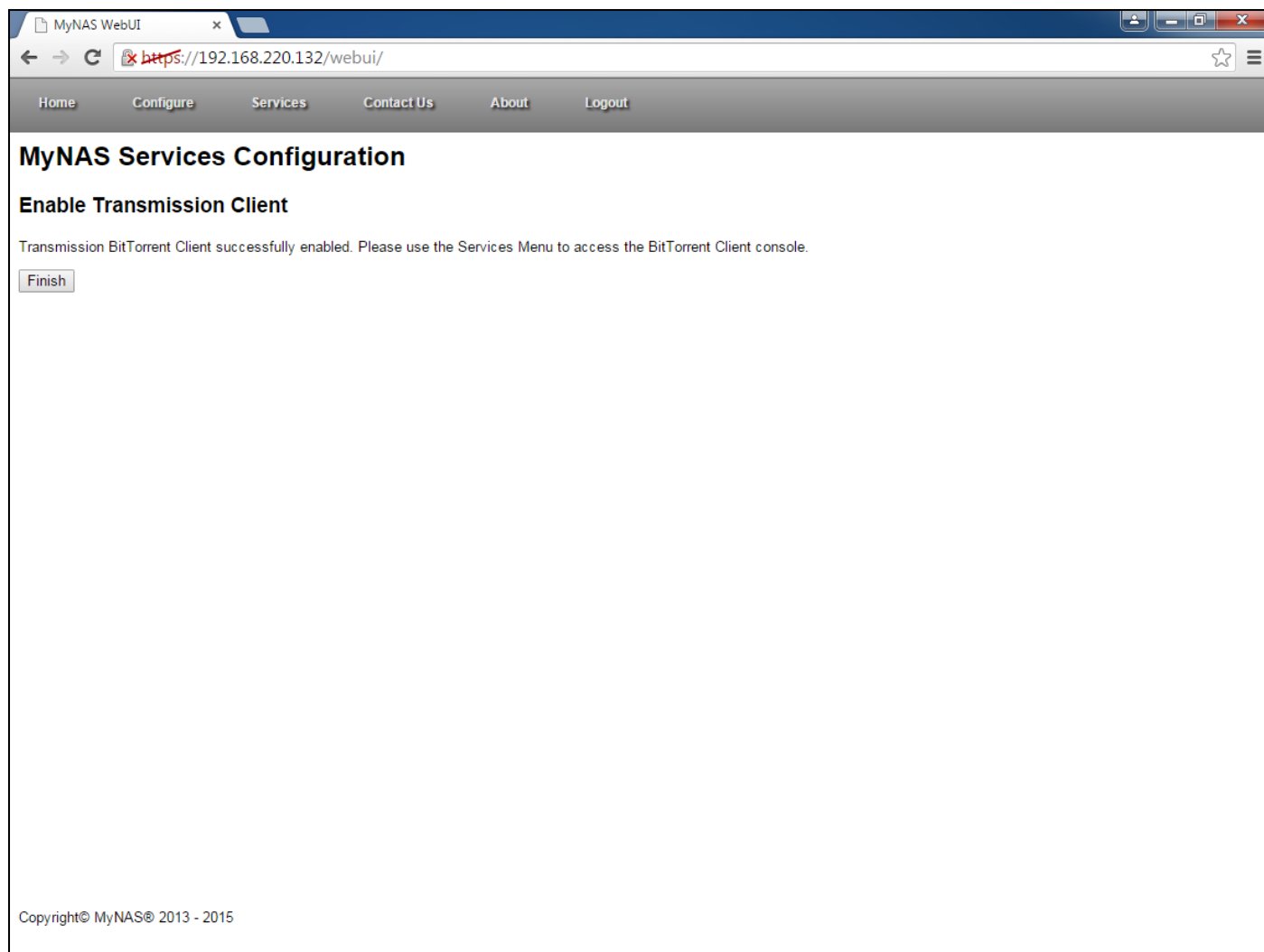
Select which ZFS Pool to use for Transmission:

Cancel Next

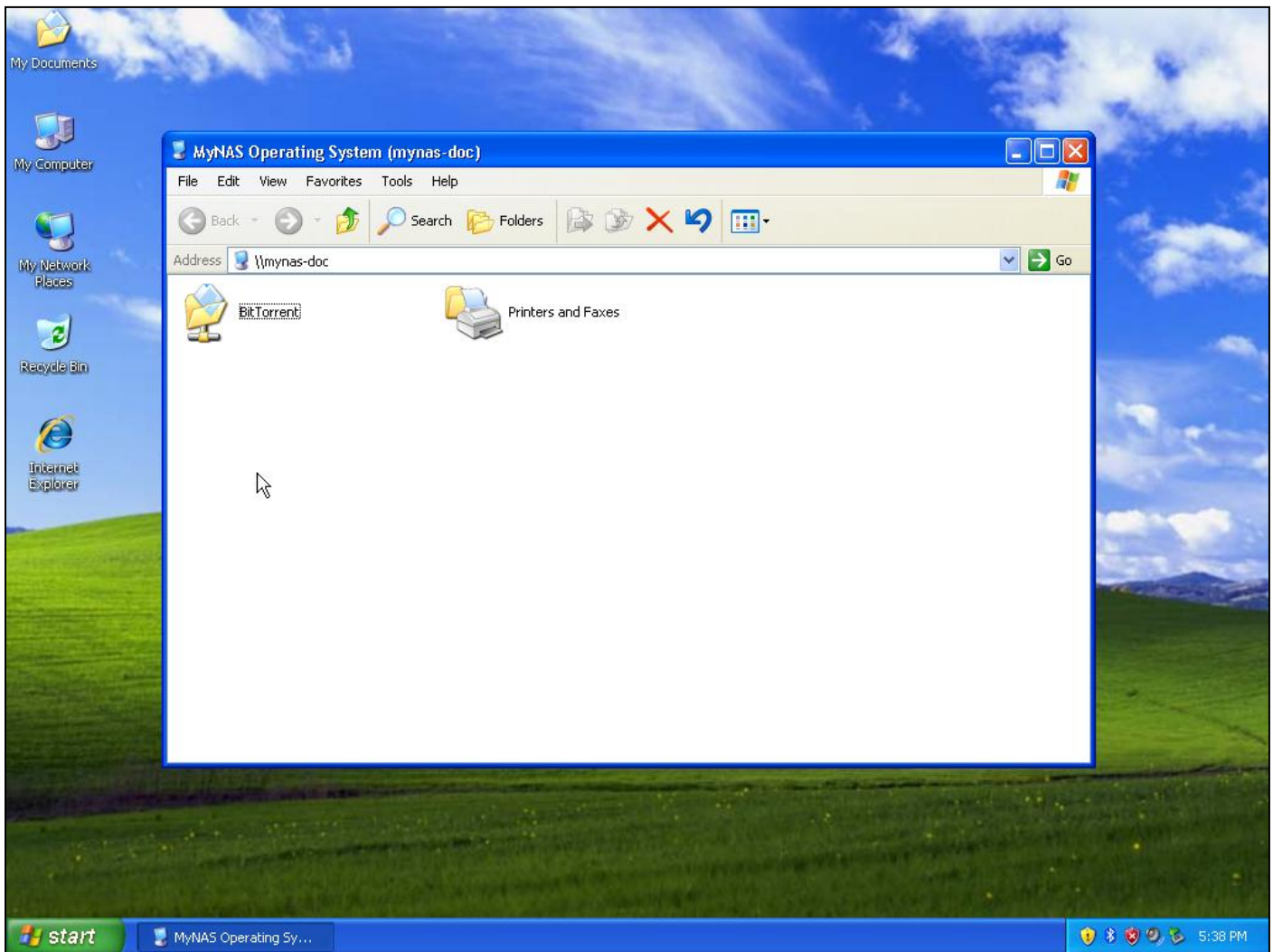
- Select ZFS Pool -
- Select ZFS Pool -
storage0
storage1

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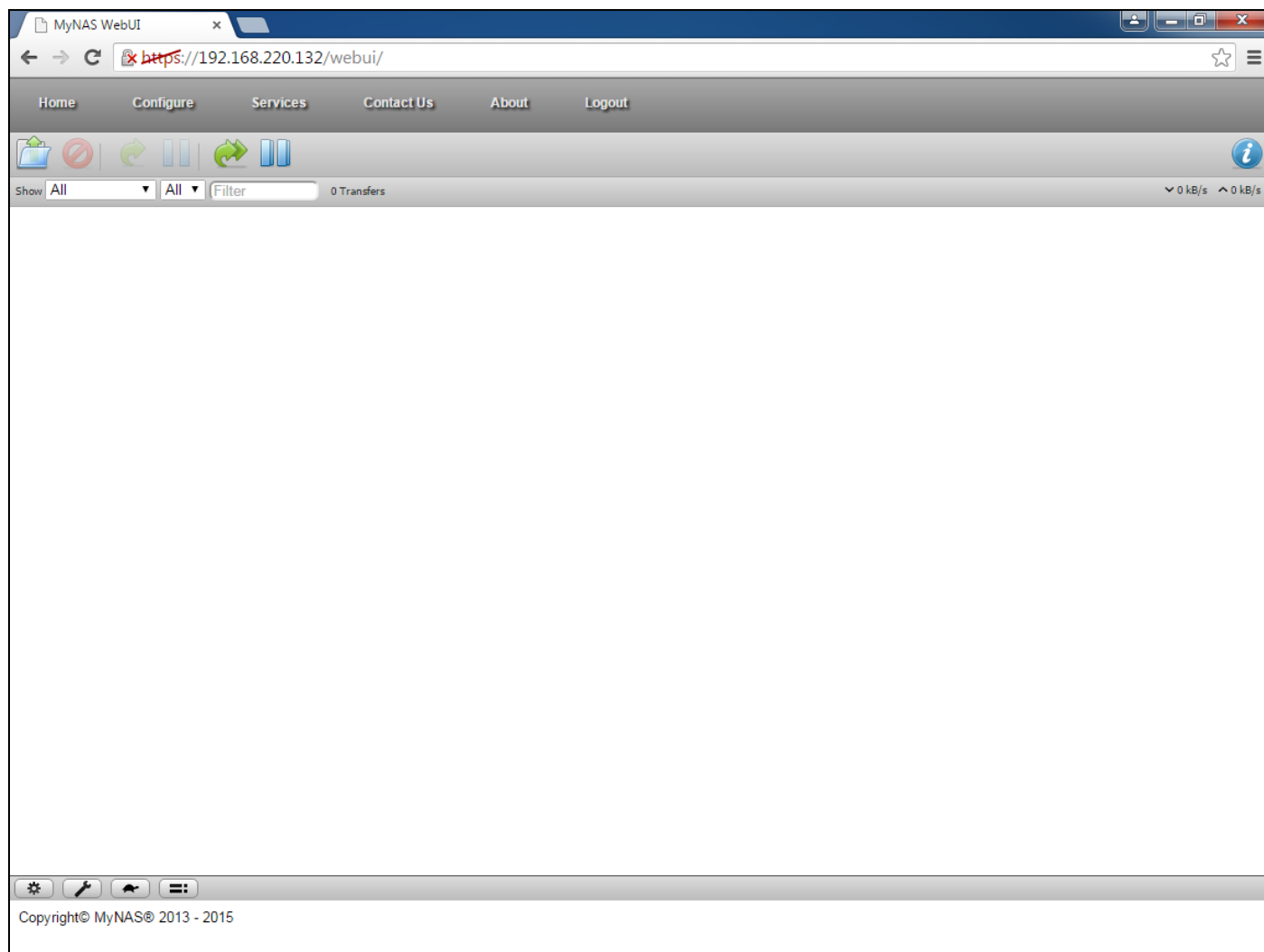
Once the pool where to store the BitTorrent data is selected, click 'Next', then 'Finish' to complete the configuration



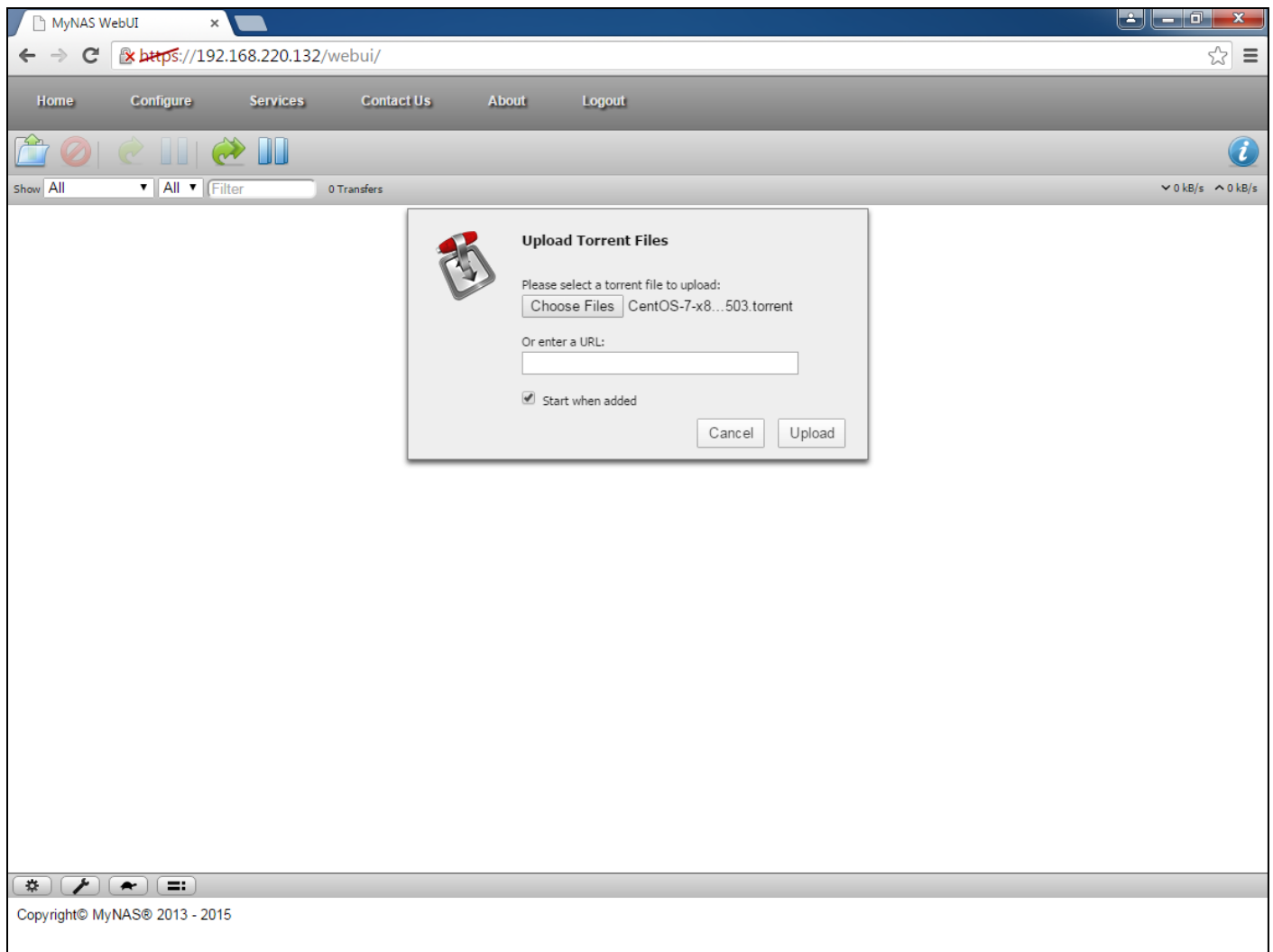
The BitTorrent data repository is also automatically shared out to enable easy access to your downloaded files:



Once Transmission is enabled, click on the 'Services' menu, then 'Transmission' to bring up the fully functional Transmission Client:



To use the BitTorrent client, upload a .torrent file from your local machine:



Once uploaded, the torrent will start to download:

The screenshot displays the MyNAS WebUI interface in a web browser. The address bar shows the URL `https://192.168.220.132/webui/`. The navigation menu includes links for Home, Configure, Services, Contact Us, About, and Logout. Below the menu, there are icons for file operations and a status bar showing '1 Transfer' with a speed of 1.59 MB/s. The main content area is divided into two panels. The left panel shows a download progress bar for 'CentOS-7-x86_64-NetInstall-1503', indicating it is downloading from 48 of 60 peers at 1.59 MB/s. The right panel provides detailed information about the torrent, including its activity and details.

CentOS-7-x86_64-NetInstall-1503

Downloaded from 48 of 60 peers - 1.59 MB/s 0 kB/s
46.7 MB of 377.4 MB (12.3%) - 3 minutes, 33 seconds remaining

CentOS-7-x86_64-NetInstall-1503

Activity

Have:	36.7 MB of 377.4 MB (12.3%), 9.10 MB Unverified
Availability:	100%
Downloaded:	46.2 MB
Uploaded:	131.1 kB (Ratio: 0.00)
State:	Downloading
Running Time:	47 seconds
Remaining Time:	3 minutes, 33 seconds
Last Activity:	Active now
Error:	None

Details

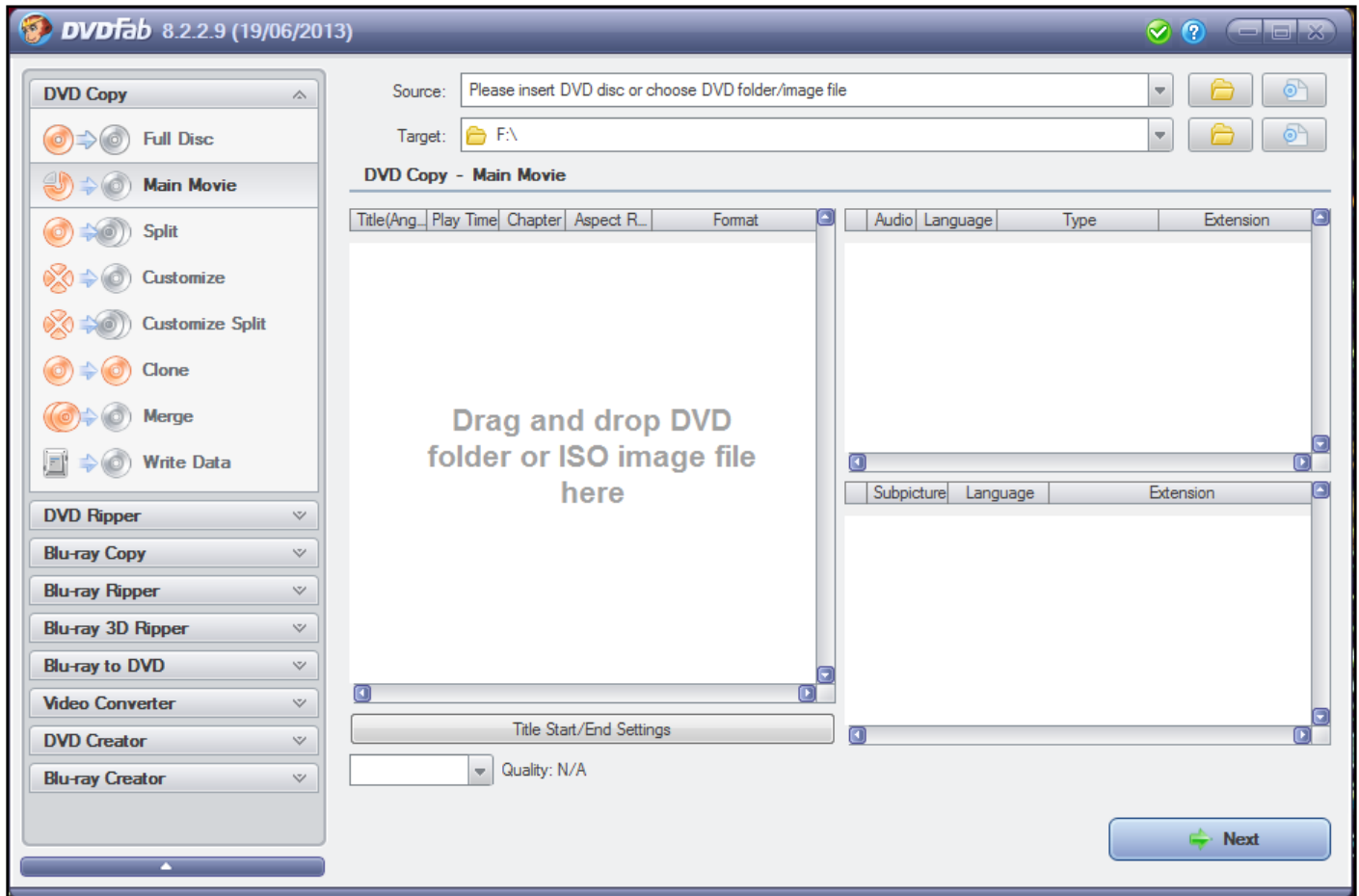
Size:	377.4 MB (721 pieces @ 512.0 KiB)
Location:	/storage1/data-shares/BitTorrent
Hash:	0f3d660d2a4eda98fbcfb6419c7ca446a610611
Privacy:	Public torrent
Origin:	Created by mktorrent 1.0 on Wed Apr 01 2015
Comment:	CentOS 7 x86_64 NetInstall 1503 ISO

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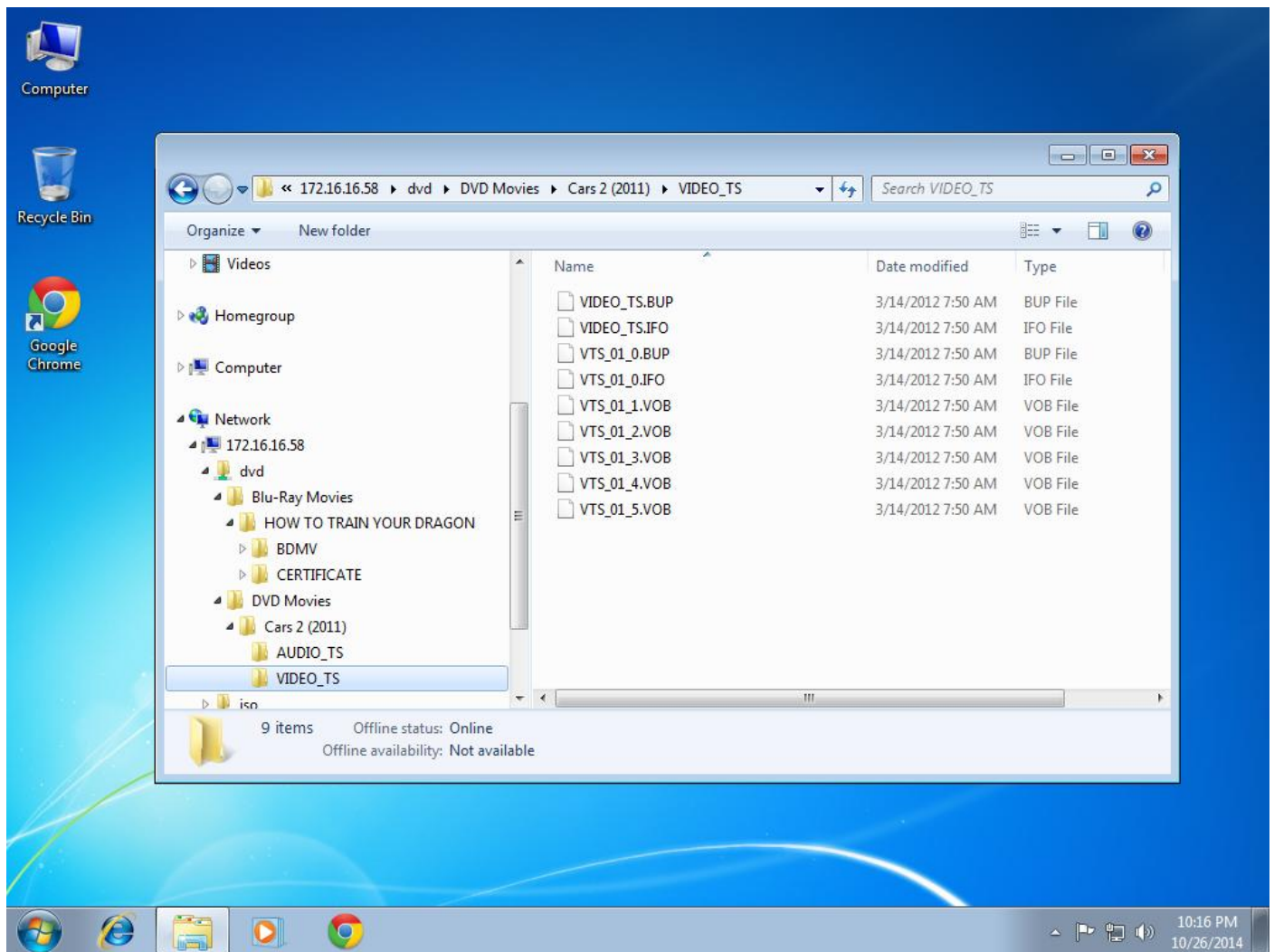
Enable / Disable MiniDLNA

From the WebUI, simply click the appropriate button to Enable / Disable the MiniDLNA Server. Once enabled, you will should be able to view any shared content via network devices that support DLNA. For further information regarding DLNA, refer to <http://www.dlna.org/consumer-home>

When using DVD backup tools (such as DVDfab), backup the 'Main Movie' to your MyNAS DVD Share that will be shared out via DLNA:

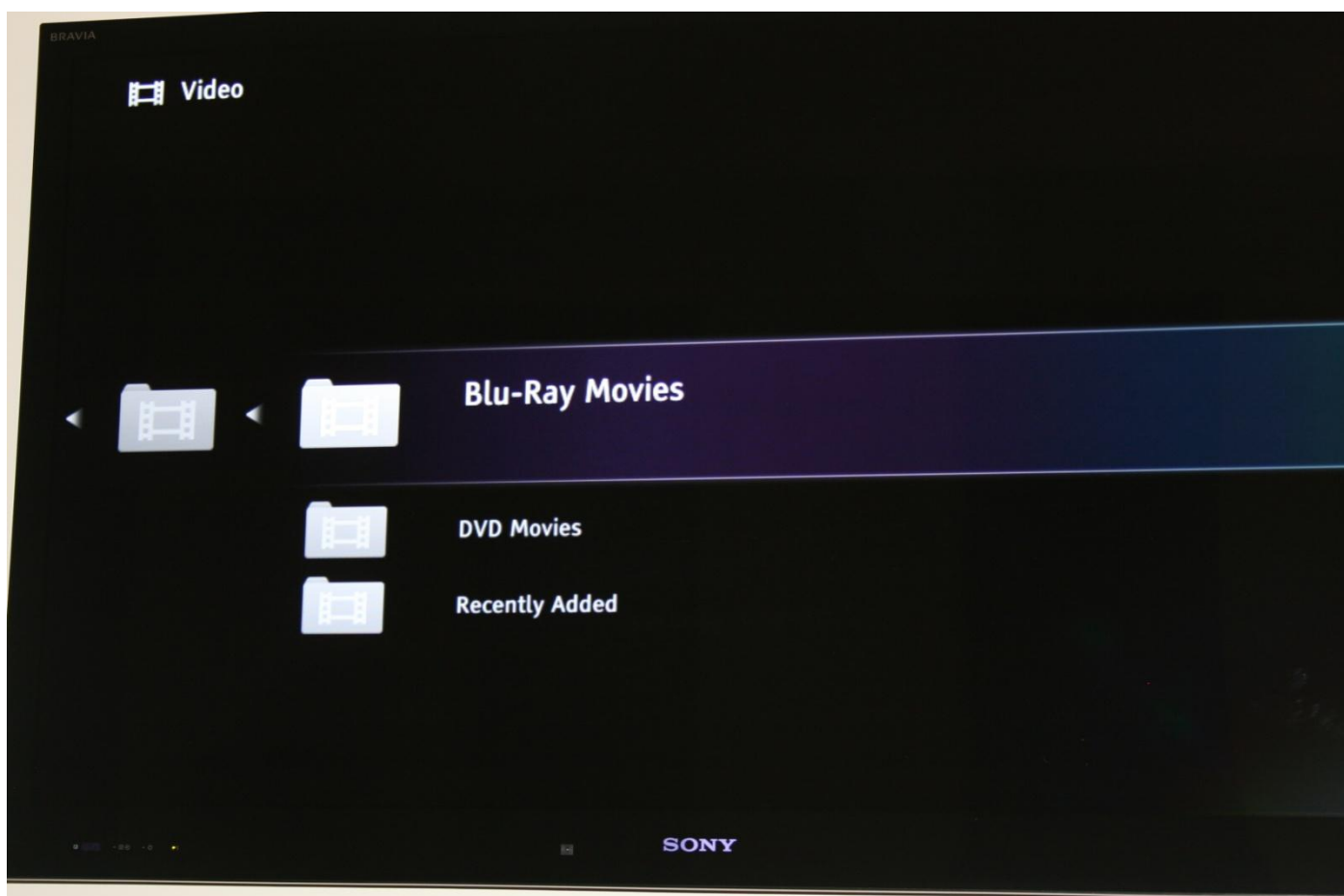
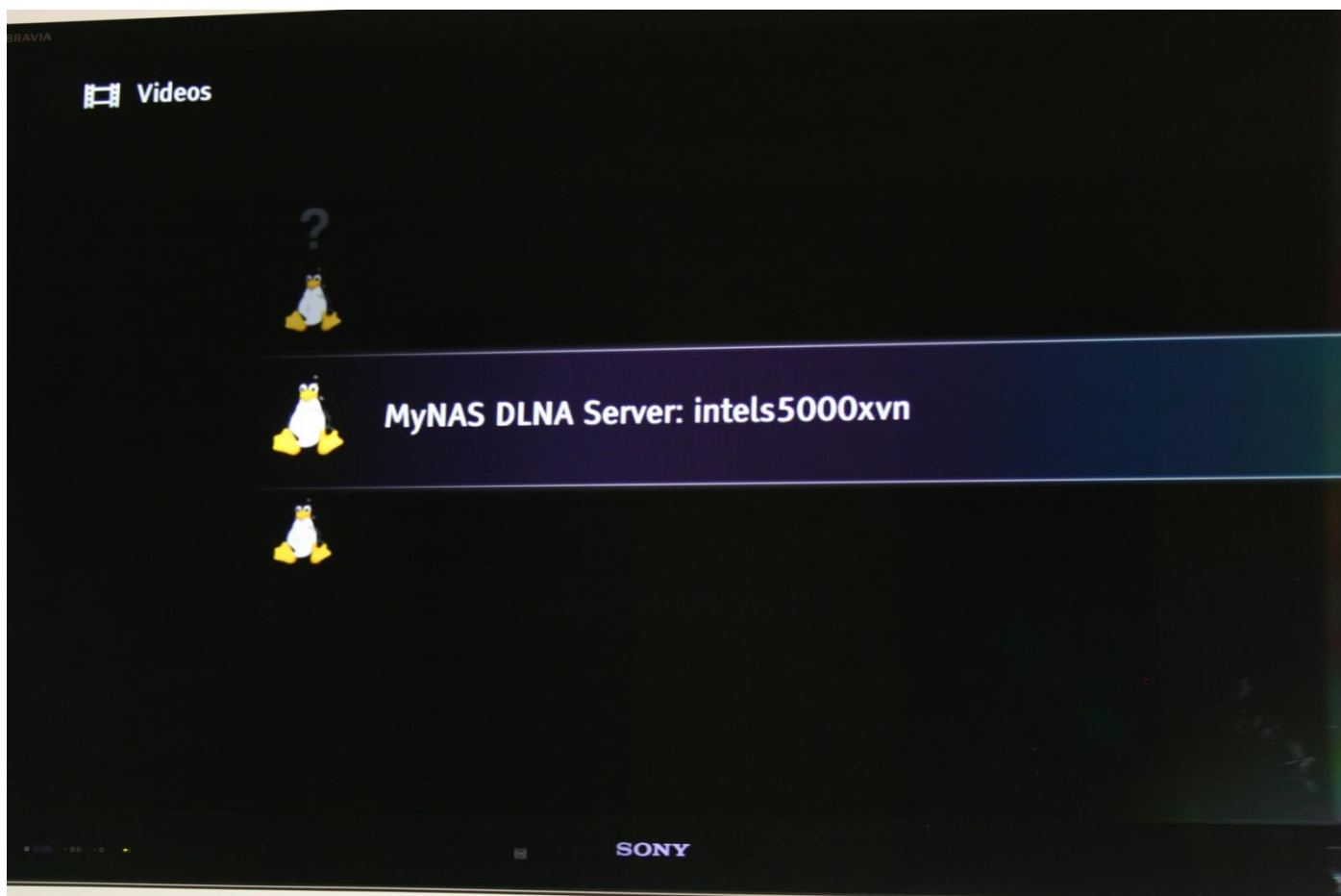


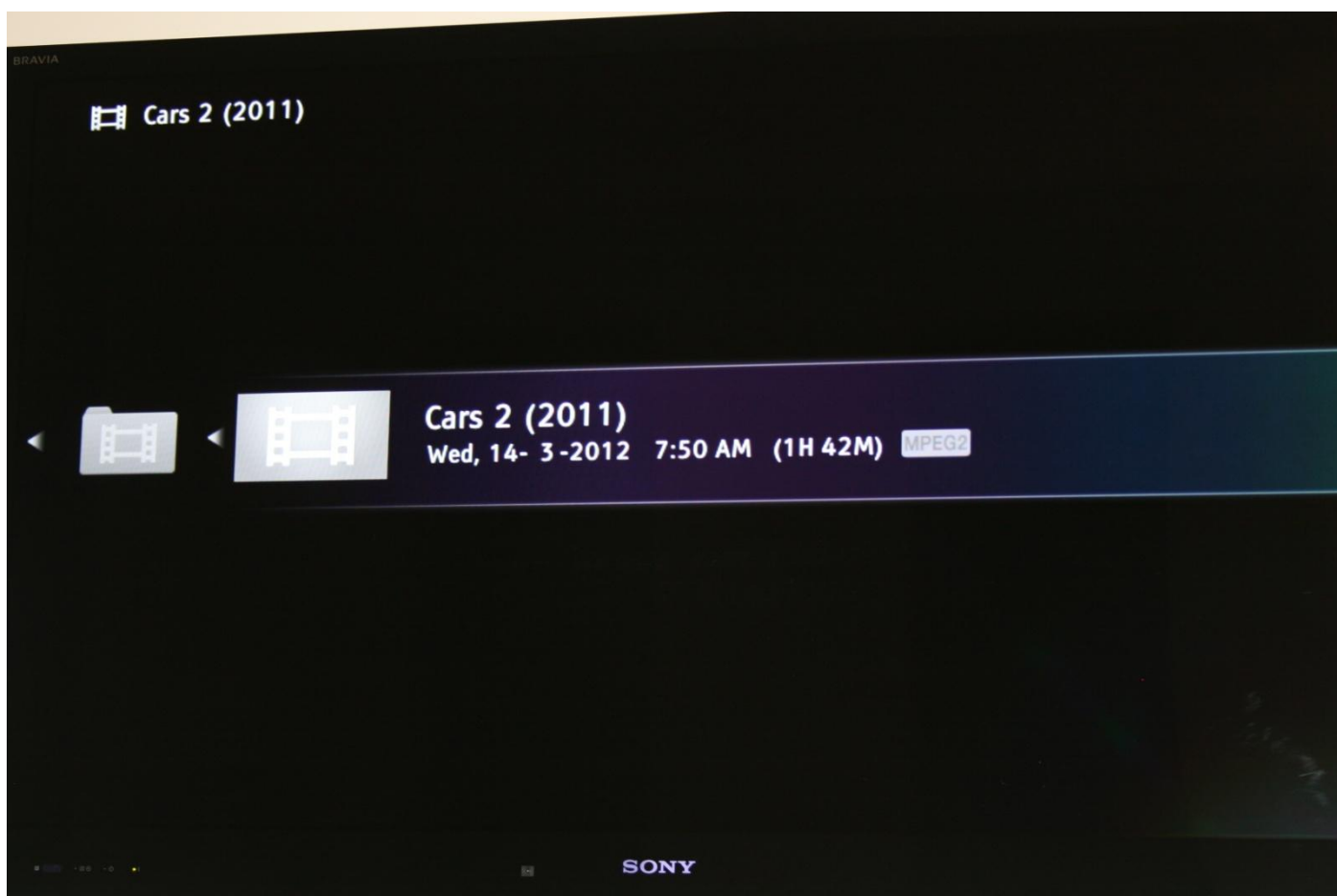
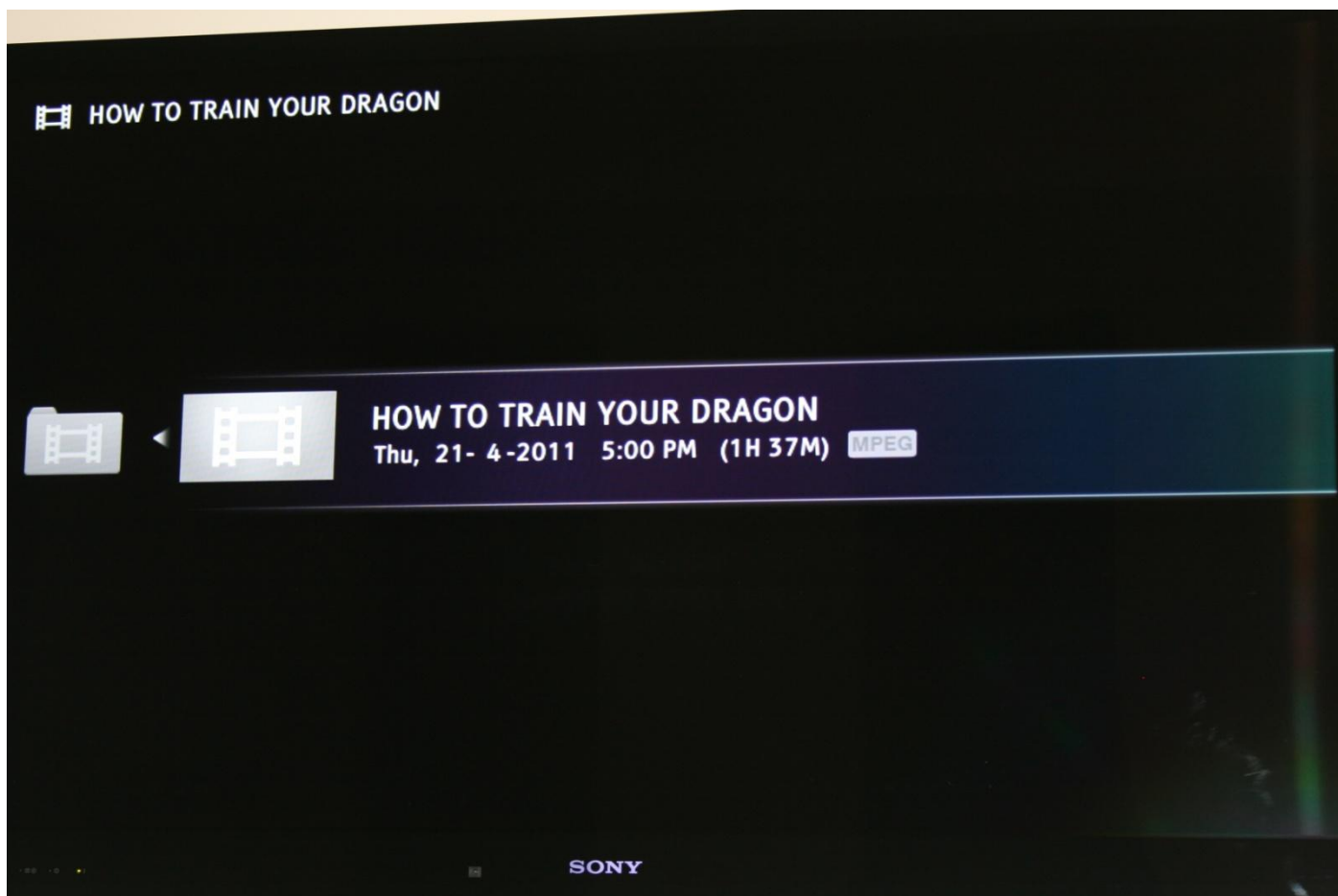
The DLNA Server on MyNAS will take all of the individual DVD VOB and Blu-Ray files and 'automatically' stitch them together to ensure a seamless movie playback from a DLNA device such as a TV:



When viewing the DLNA Server on your TV, refer to your TV manual for correct configuration of accessing a network DLNA Server.

The illustrations below detail what is seen via a Sony Bravia TV:





Note: If the DVD / Blu-Ray backup contains DTS Audio, MyNAS will denote that the source has DTS audio by adding [DTS] to the file name. DTS Audio is generally not supported by DLNA devices, thus you may not hear any audio when attempting to watch a DLNA stream that only has DTS audio.

Enable / Disable Kodi (XBMC) Central Database

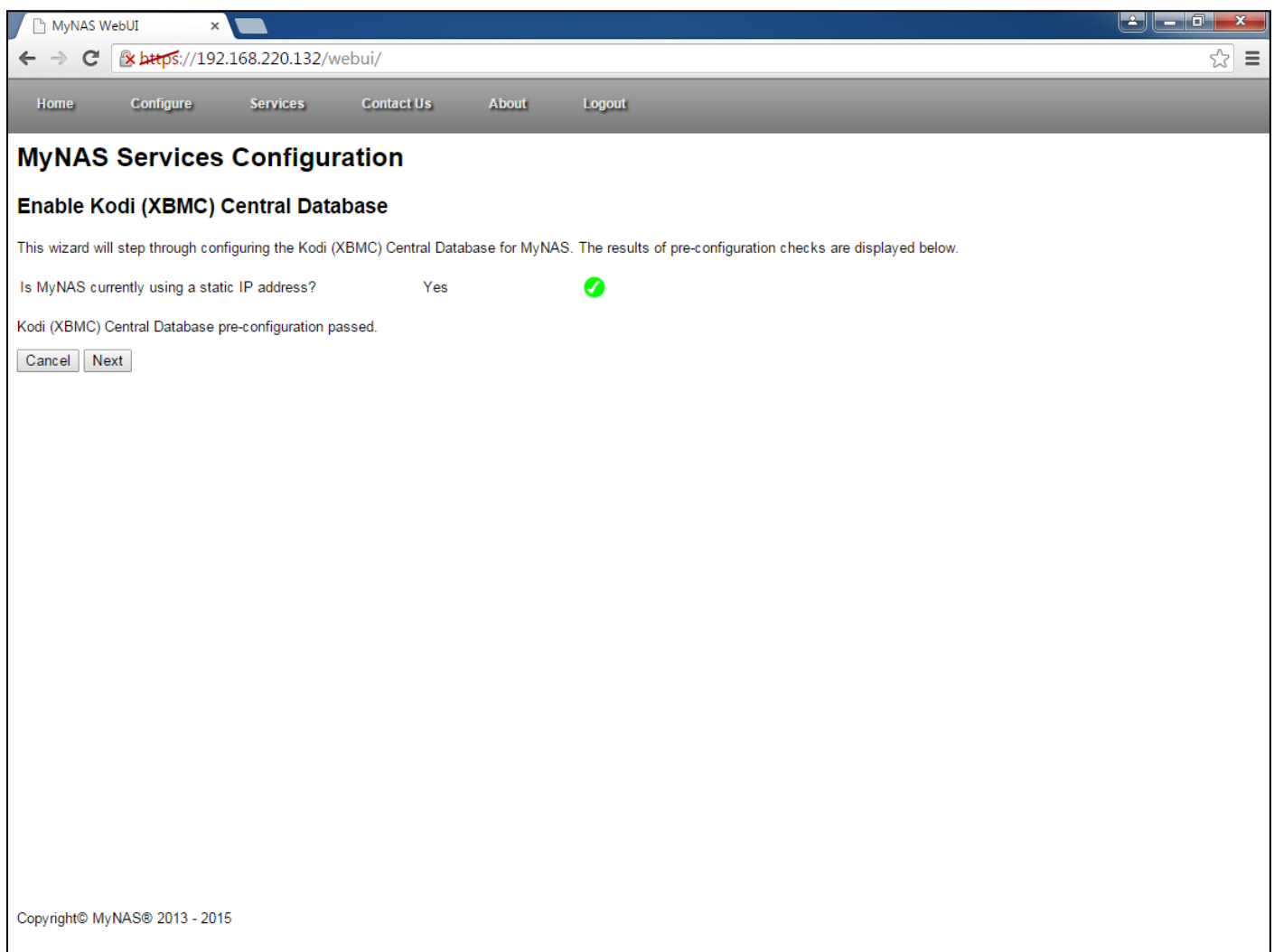
What is Kodi?

Kodi is an award-winning free and open source (GPL) software media player and entertainment hub that can be installed on Linux, OSX, Windows, iOS, and Android, featuring a 10-foot user interface for use with televisions and remote controls. It allows users to play and view most videos, music, podcasts, and other digital media files from local and network storage media and the internet.

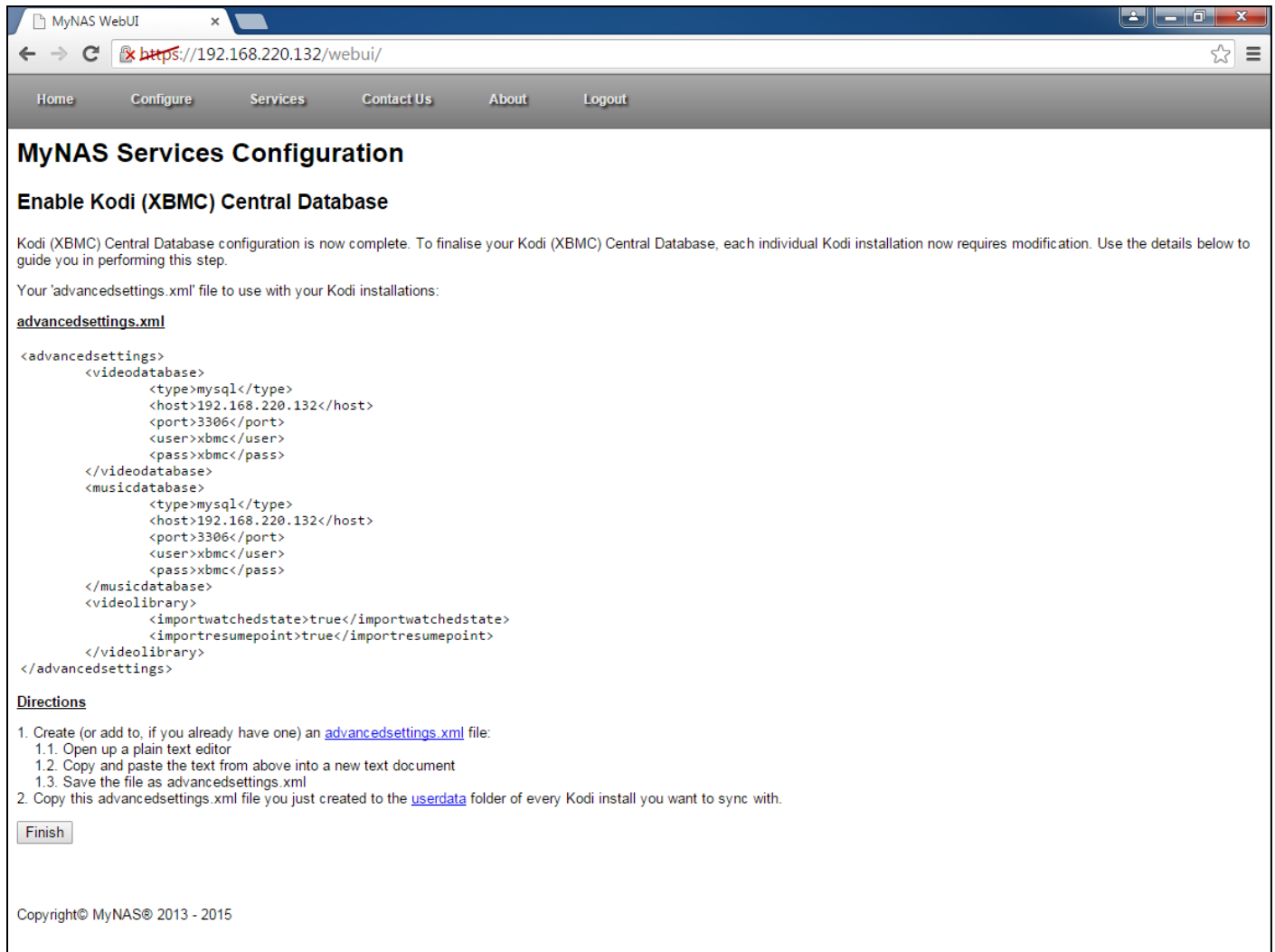
With Kodi installed on many devices, having a central database to manage and share the same content on those devices is simplified.

Enabling the Kodi Central Database

From the WebUI, simply click the appropriate button to Enable / Disable the Kodi Central Database. In order to do this, MyNAS requires a static IP address to be configured as illustrated below:



If the pre-configuration check is successful, click 'Next'. The Kodi database configuration will now occur, and will provide you with the required additional configuration items needed to configure your Kodi installation:



The screenshot shows the MyNAS WebUI interface in a web browser. The address bar displays <https://192.168.220.132/webui/>. The navigation menu includes Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS Services Configuration". Below it, the section is "Enable Kodi (XBMC) Central Database".

Kodi (XBMC) Central Database configuration is now complete. To finalise your Kodi (XBMC) Central Database, each individual Kodi installation now requires modification. Use the details below to guide you in performing this step.

Your 'advancedsettings.xml' file to use with your Kodi installations:

advancedsettings.xml

```
<advancedsettings>
  <videodatabase>
    <type>mysql</type>
    <host>192.168.220.132</host>
    <port>3306</port>
    <user>xbmc</user>
    <pass>xbmc</pass>
  </videodatabase>
  <musicdatabase>
    <type>mysql</type>
    <host>192.168.220.132</host>
    <port>3306</port>
    <user>xbmc</user>
    <pass>xbmc</pass>
  </musicdatabase>
  <videolibrary>
    <importwatchedstate>true</importwatchedstate>
    <importresume>true</importresume>
  </videolibrary>
</advancedsettings>
```

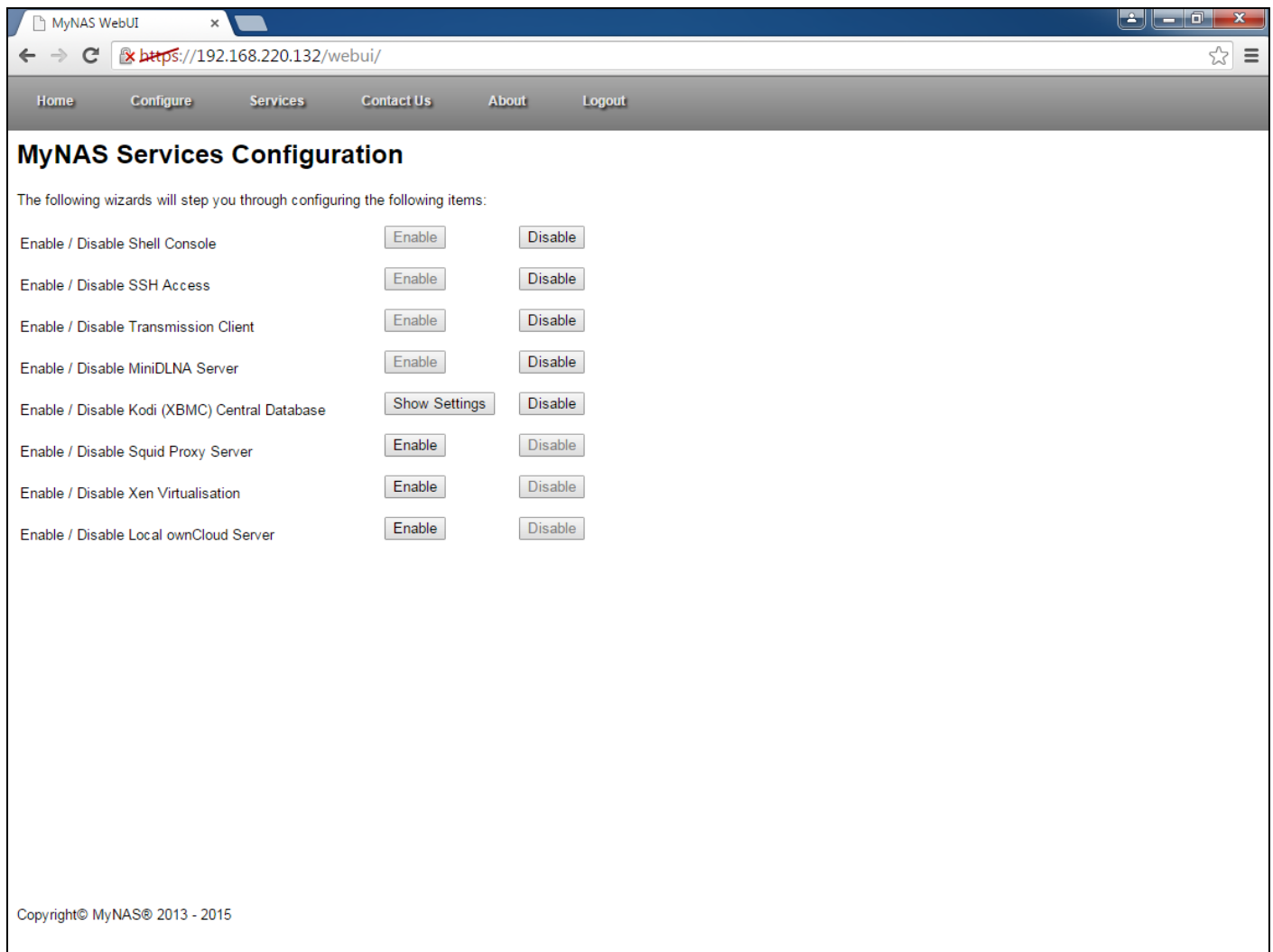
Directions

1. Create (or add to, if you already have one) an [advancedsettings.xml](#) file:
 - 1.1. Open up a plain text editor
 - 1.2. Copy and paste the text from above into a new text document
 - 1.3. Save the file as advancedsettings.xml
2. Copy this advancedsettings.xml file you just created to the [userdata](#) folder of every Kodi install you want to sync with.

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Click 'Finish' to complete the setup of the Kodi Central Database.

Note: If you want to view the settings for configuring Kodi at any time, going back into the MyNAS Services Configuration displays the following:



Clicking on the 'Show Settings' button will display the configuration which you need for your client configuration.

Enable / Disable Squid Proxy Server

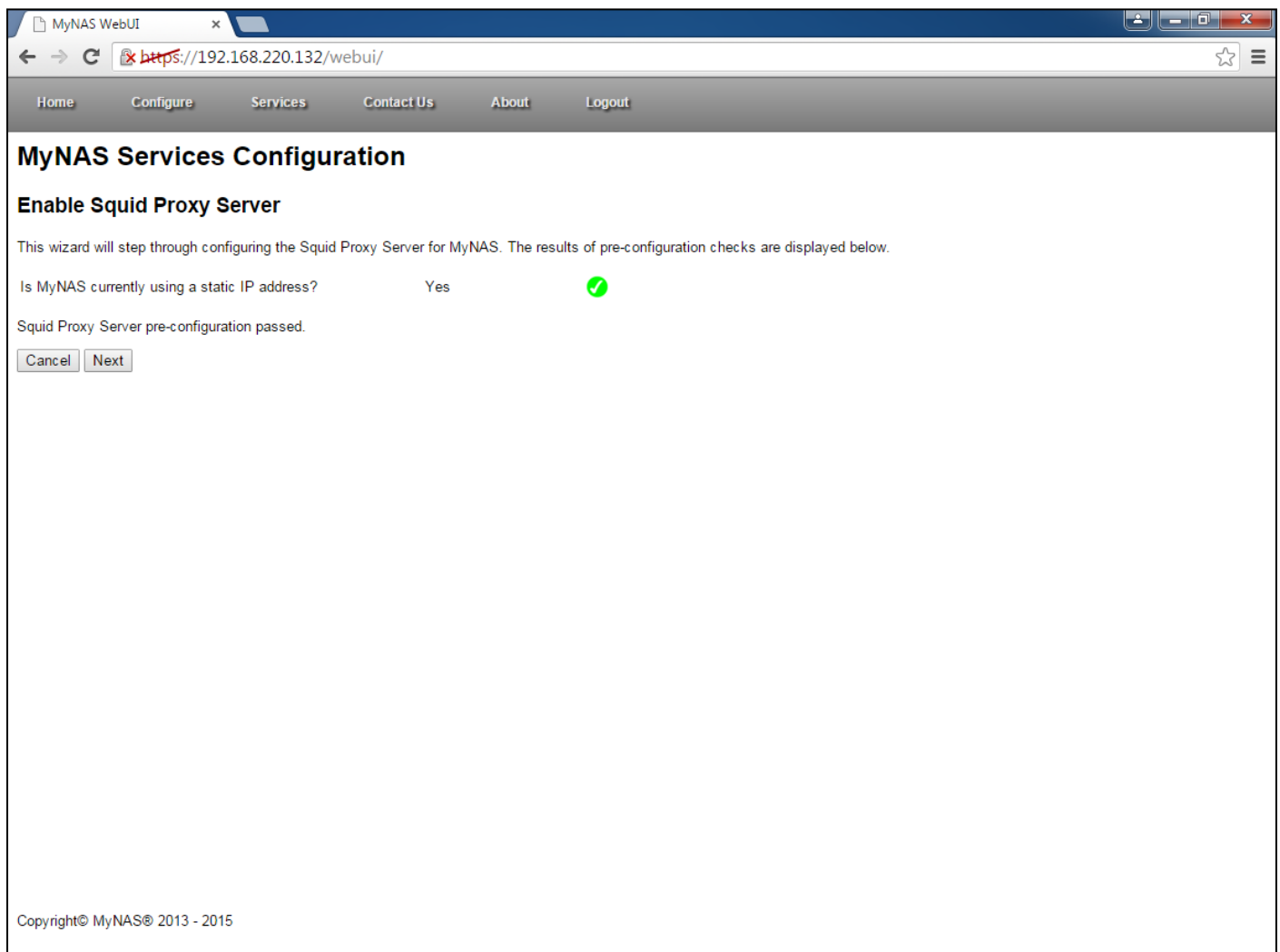
What is Squid Proxy Server?

Squid is a caching proxy for the Web supporting HTTP, HTTPS, FTP, and more. It reduces bandwidth and improves response times by caching and reusing frequently-requested web pages.

Squid is used by hundreds of Internet Providers world-wide to provide their users with the best possible web access. Squid optimises the data flow between client and server to improve performance and caches frequently-used content to save bandwidth. Squid can also route content requests to servers in a wide variety of ways to build cache server hierarchies which optimise network throughput. By utilising Squid Proxy Server in your environment you are implementing a way to improve your Internet experience.

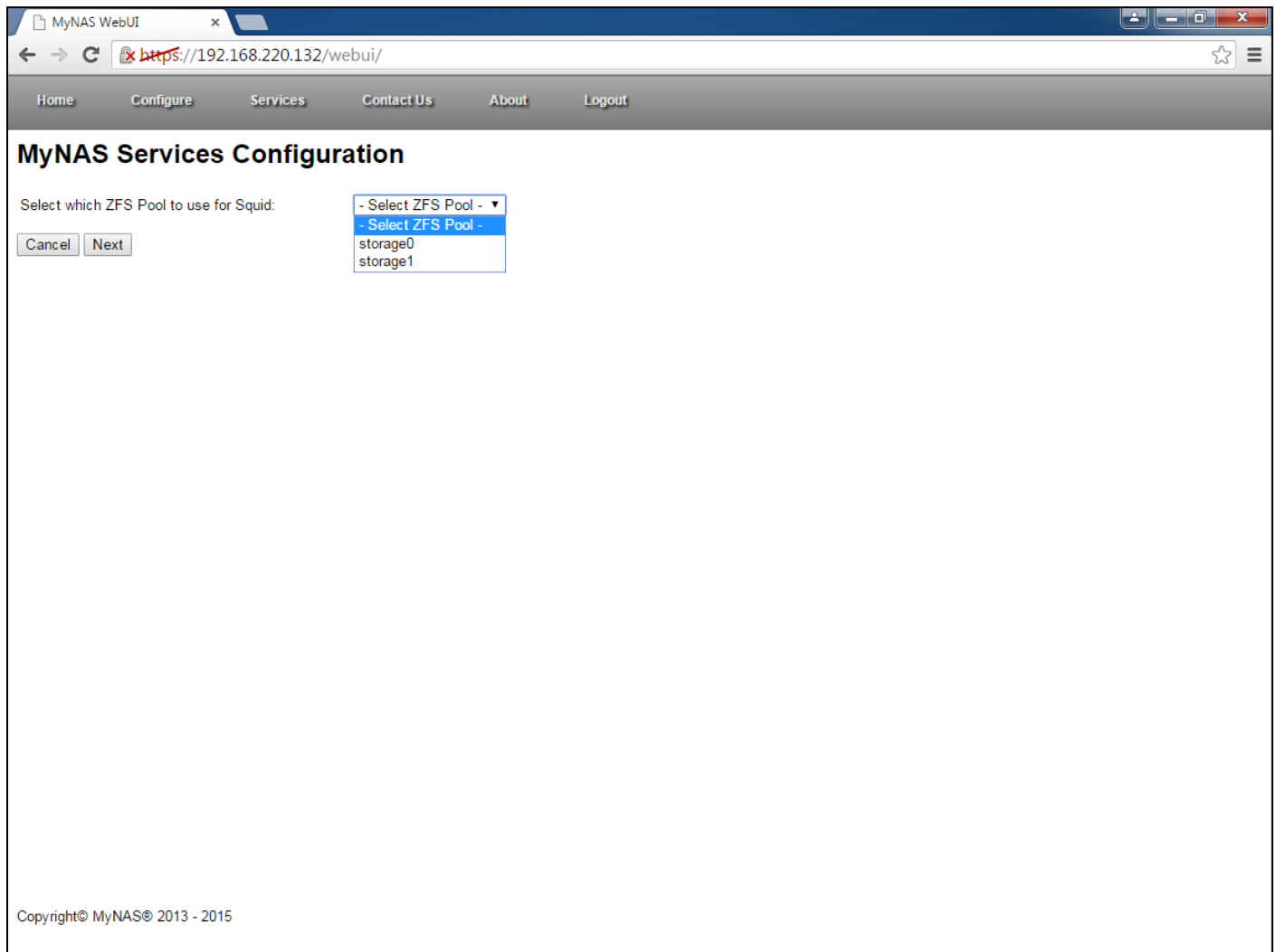
Enabling Squid Proxy Server

From the WebUI, simply click the appropriate button to Enable / Disable the Squid Proxy Server. In order to do this, MyNAS requires a static IP address to be configured as illustrated below:



If the pre-configuration check is successful, click 'Next'.

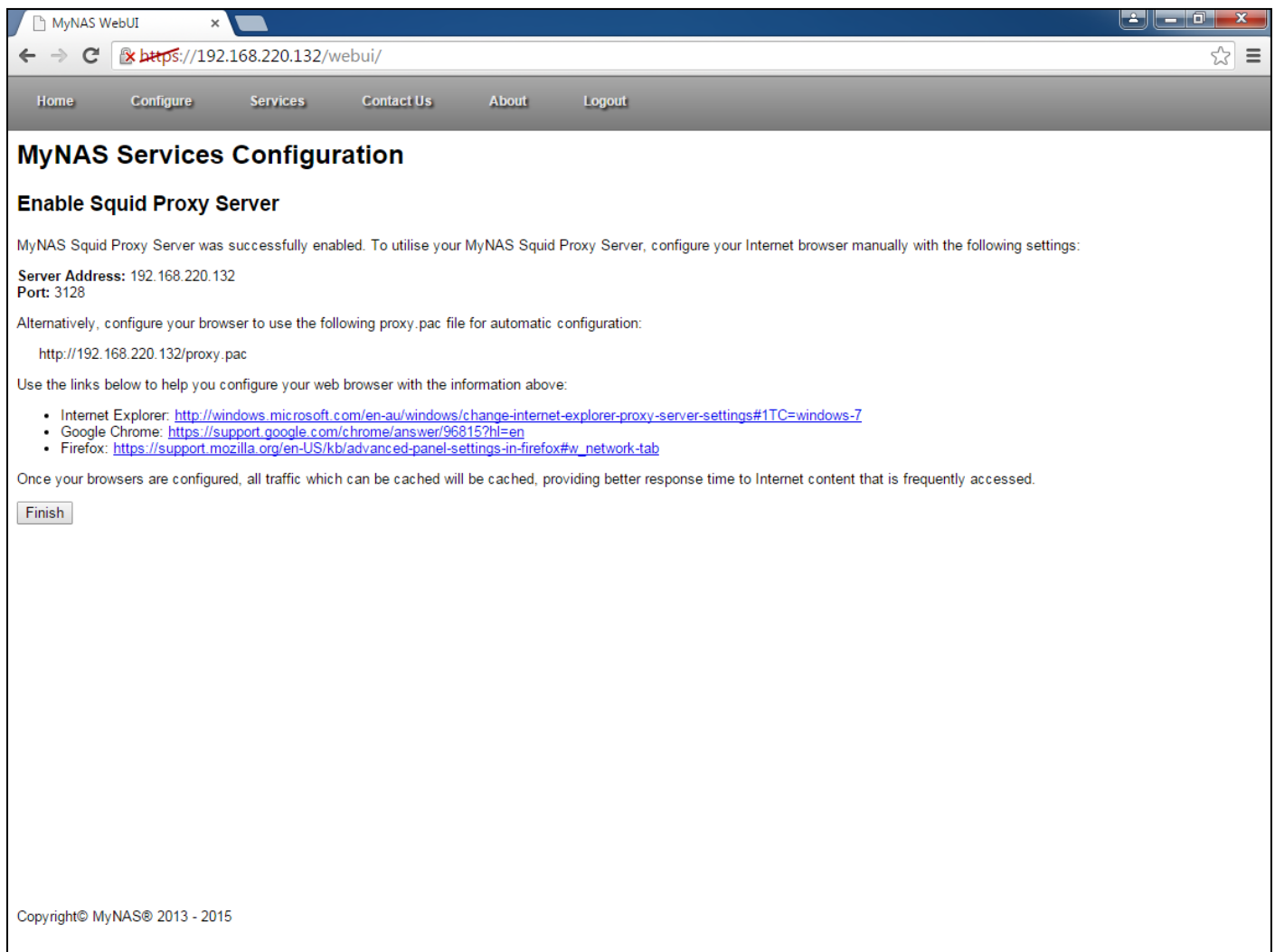
Depending on the ZFS Pool configuration, if there are more than 1 ZFS Pool configured, MyNAS will ask which ZFS Pool should be used for the Squid Proxy data:



The screenshot shows a web browser window titled 'MyNAS WebUI' with the address bar displaying 'https://192.168.220.132/webui/'. The navigation bar includes links for Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled 'MyNAS Services Configuration' and contains the instruction 'Select which ZFS Pool to use for Squid:'. Below this instruction is a dropdown menu with the following options: '- Select ZFS Pool -', '- Select ZFS Pool -', 'storage0', and 'storage1'. To the left of the dropdown are 'Cancel' and 'Next' buttons. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

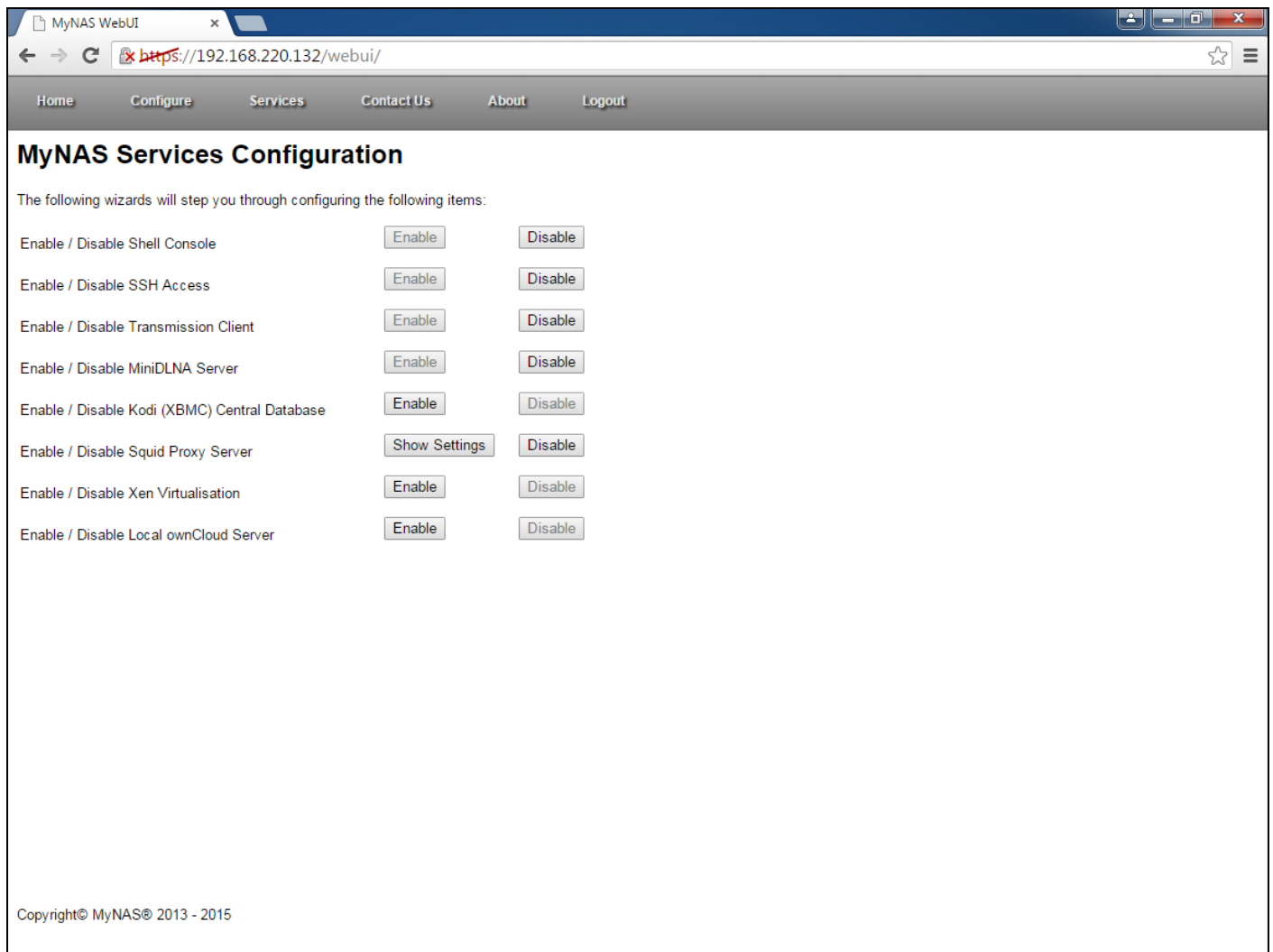
Once the pool where to store the Squid Proxy data is selected, click 'Next' to finalise the Squid proxy configuration.

MyNAS will display what configuration to use for your clients on your network to utilise the Squid proxy server:



Click 'Finish' to complete the configuration.

Note: If you want to view the settings for configuring web browser clients to use Squid at any time, going back into the MyNAS Services Configuration displays the following:



Clicking on the 'Show Settings' button will display the configuration which you need for your client configuration.

Enable / Disable Xen Virtualisation

What is Xen Virtualisation?

The Xen Project community develops an open-source type-1 or baremetal hypervisor, which makes it possible to run many instances of an operating system or indeed different operating systems in parallel on a single machine (or host). The project develops the only type-1 hypervisor that is available as open source. The hypervisor is used as the basis for a number of different commercial and open source applications, such as: server virtualization, Infrastructure as a Service (IaaS), desktop virtualization, security applications, embedded and hardware appliances. It enables users to increase server utilization, consolidate server farms, reduce complexity, and decrease total cost of ownership.

MyNAS includes this functionality to extend the capabilities of your investment in a NAS device.

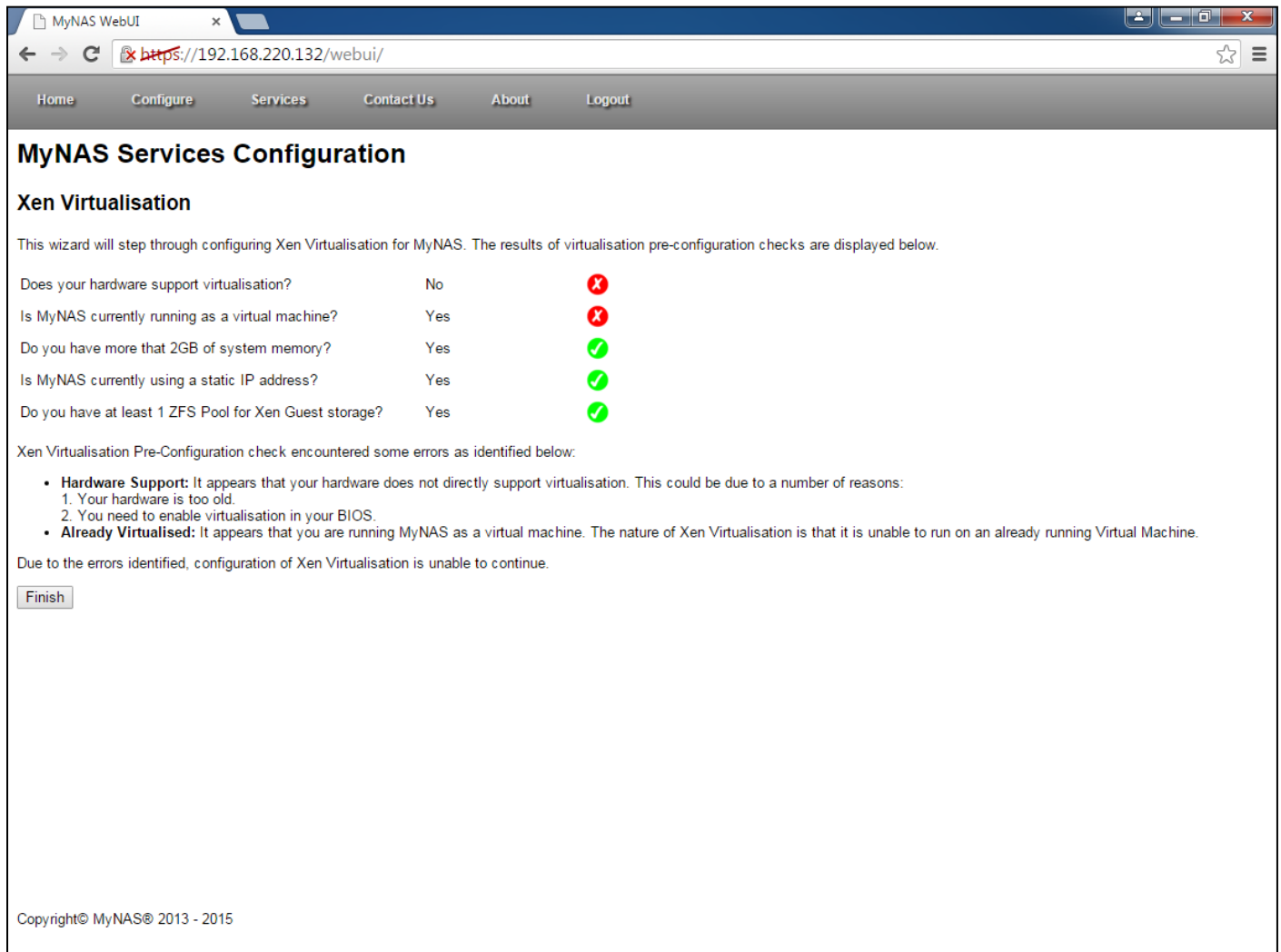
For further information on Xen Virtualisation, refer to <http://www.xenproject.org/>

To view the virtual machine desktops, Java SE version 7 is required. To download Java SE version 7, visit <http://www.oracle.com/technetwork/java/javase/downloads/index.html>

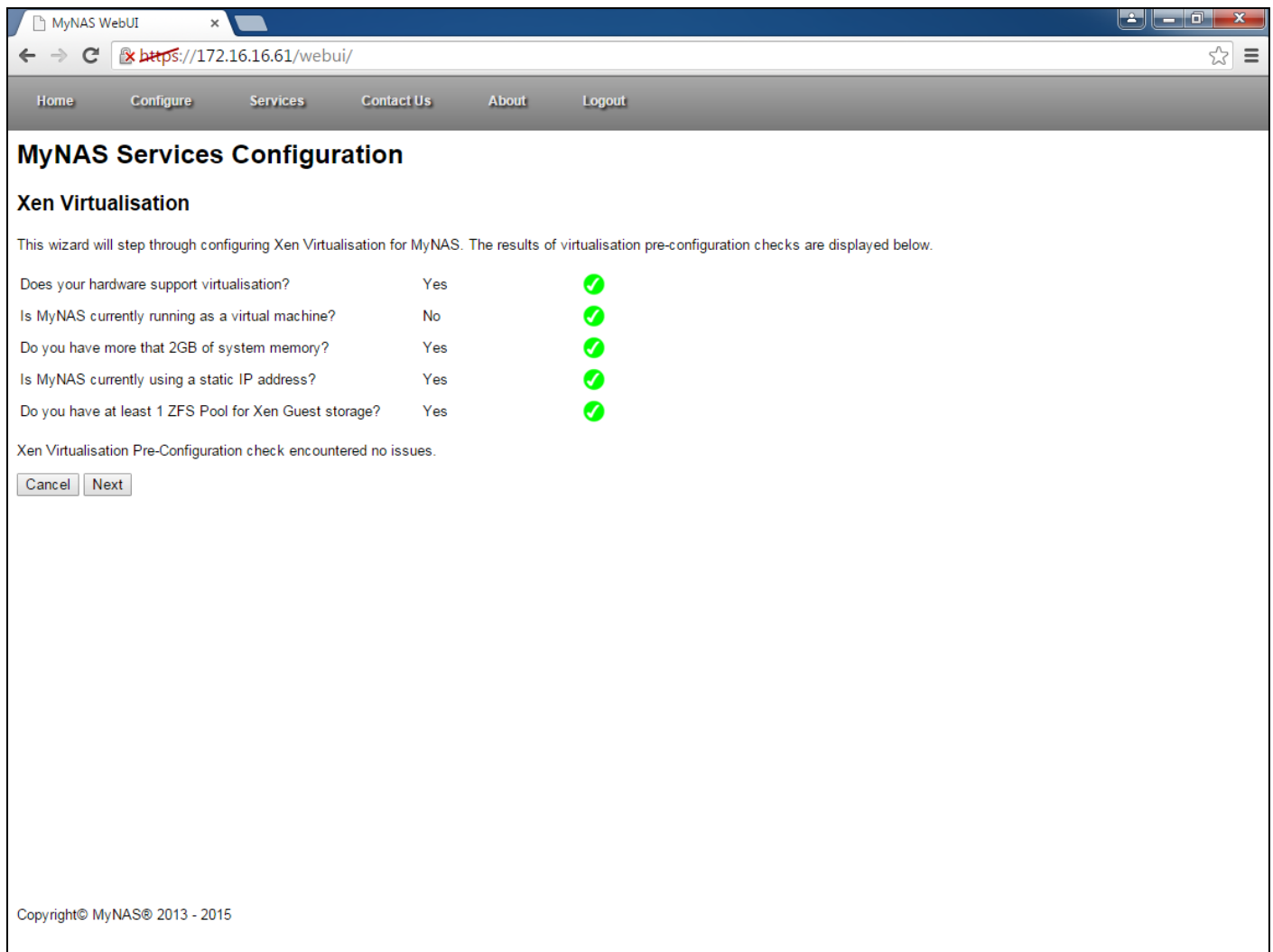
Note: The Java viewer for Xen is currently incompatible with Java SE version 8, however a solution is being worked on for this version of Java.

Enabling Xen Virtualisation

From the WebUI, simply click the appropriate button to Enable / Disable Xen Virtualisation. In order to do this, MyNAS will run through a number of pre-configuration checks:

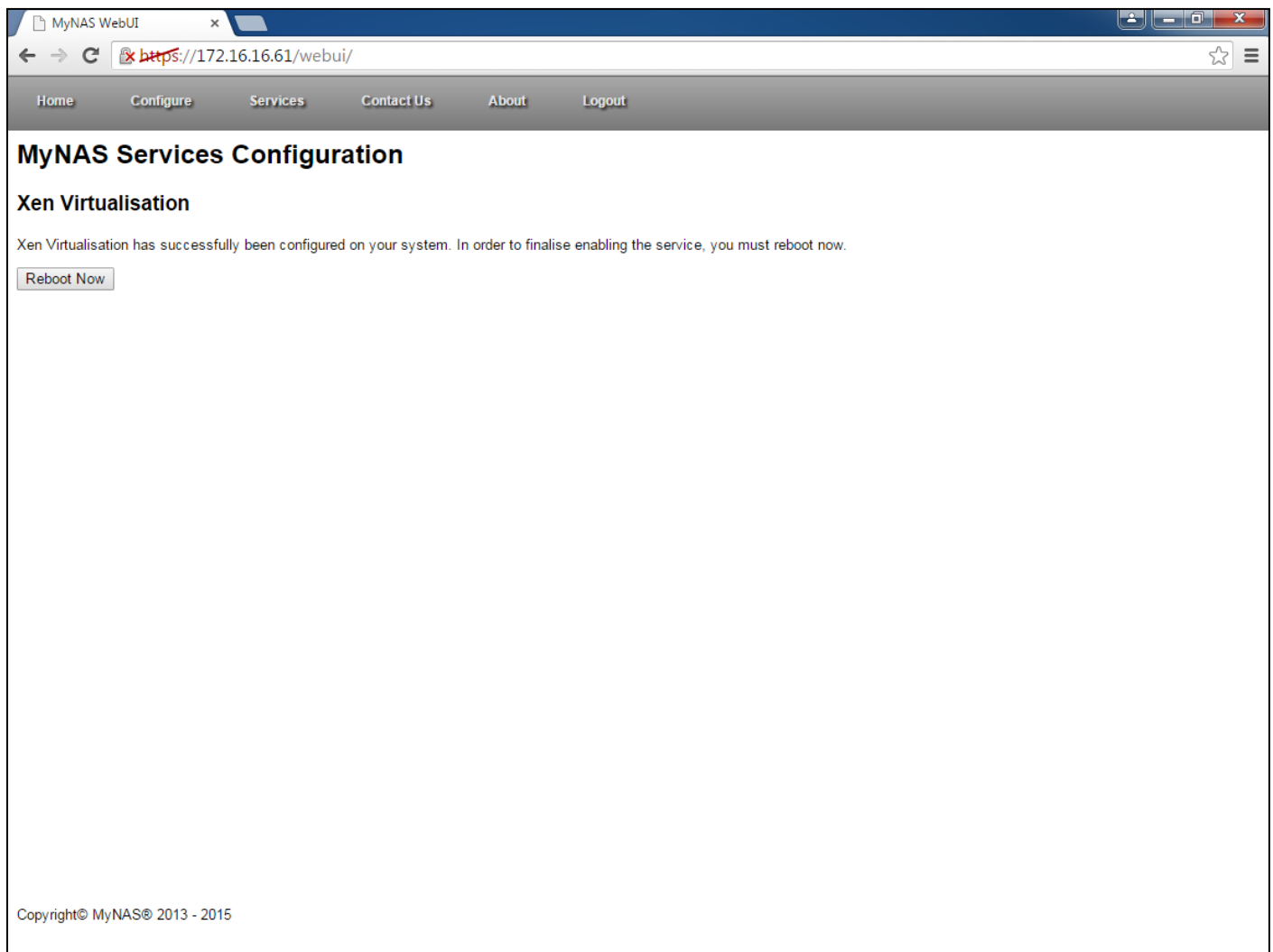


In order to proceed with enabling Xen Virtualisation, all pre-configuration checks need to be successful.



Once all pre-configuration checks are complete and successful, click 'Next'.

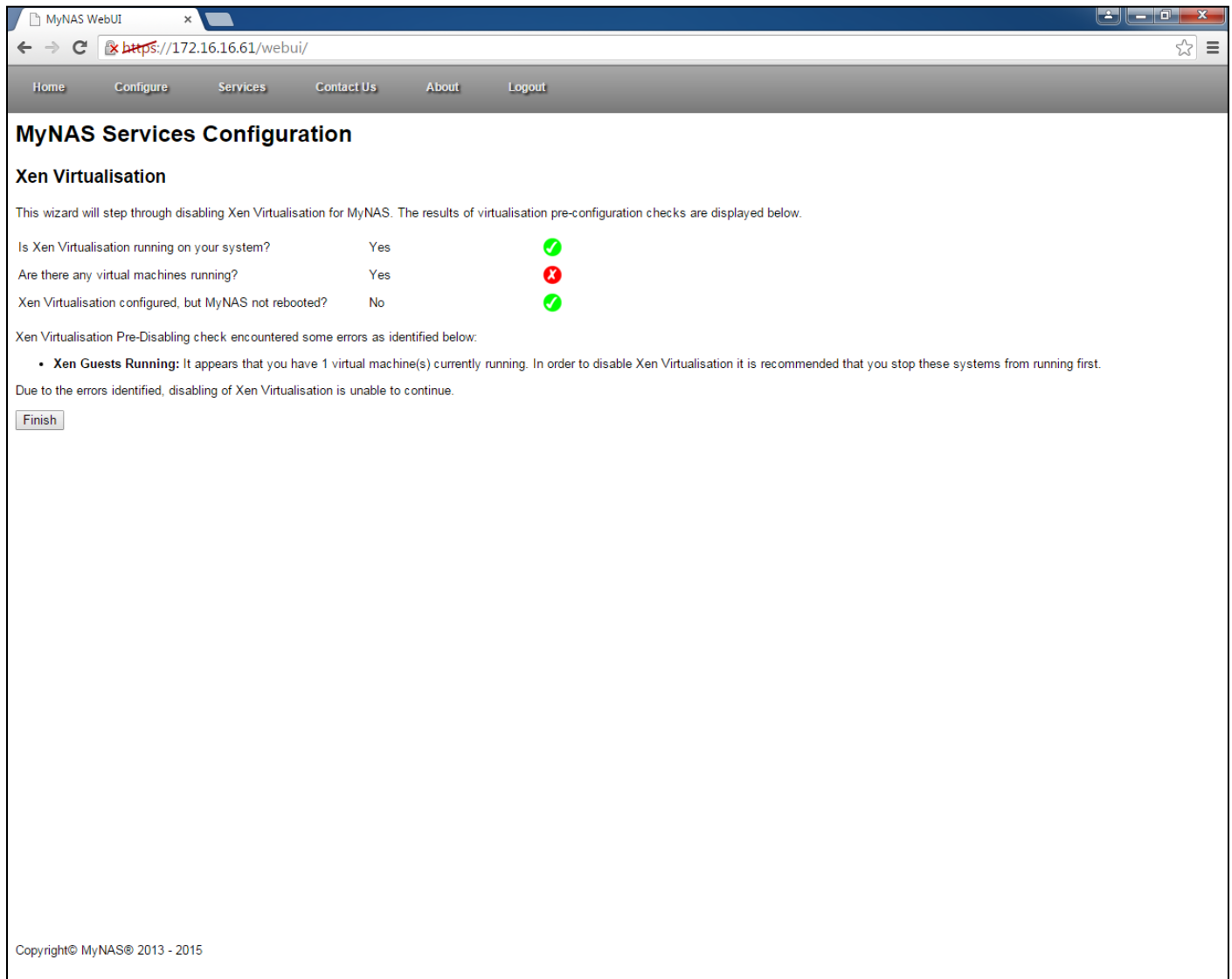
Virtualisation will now be configured on your system.



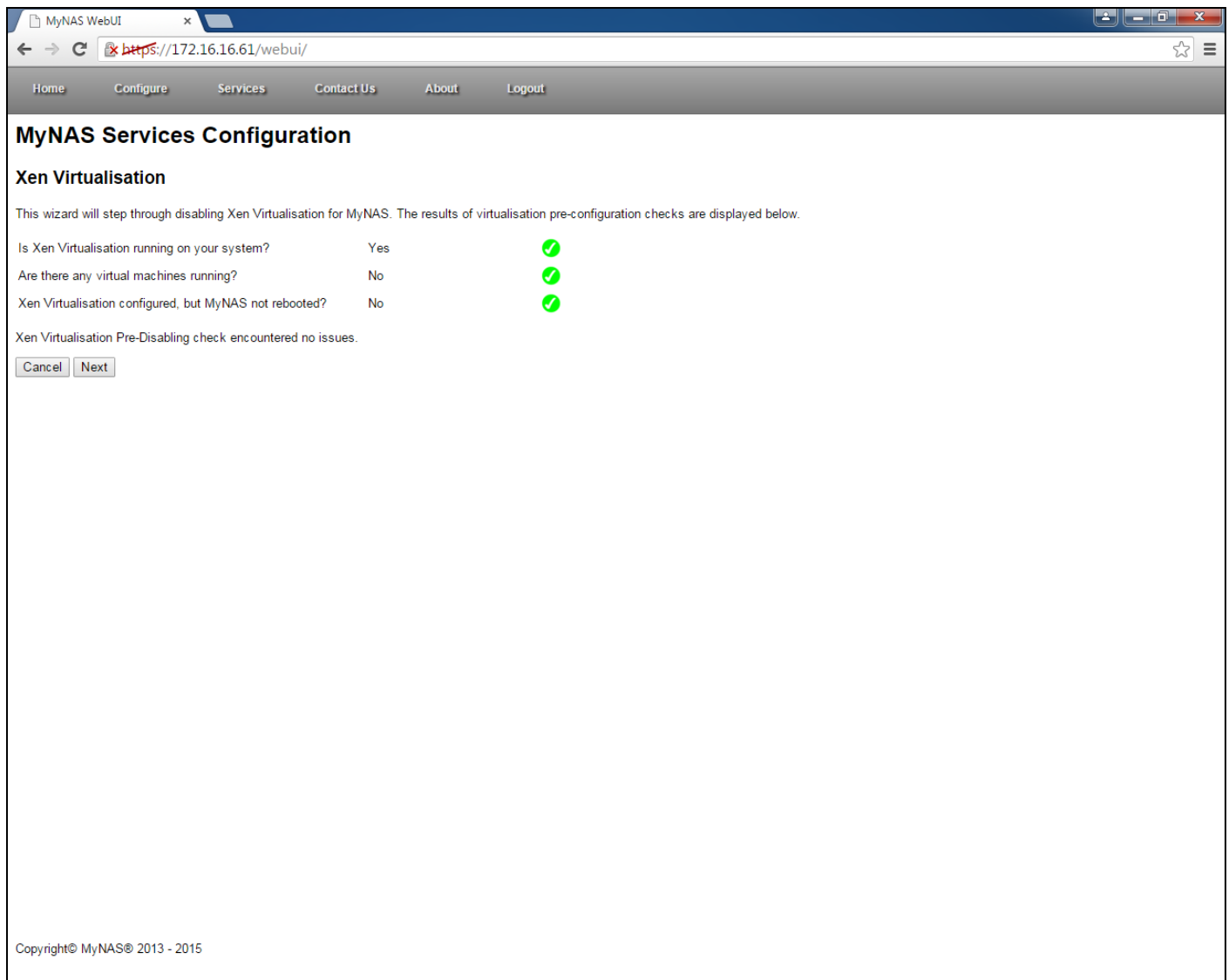
Once the configuration is complete you will need to reboot MyNAS to finalise the enabling of Xen Virtualisation.

Disabling Xen Virtualisation

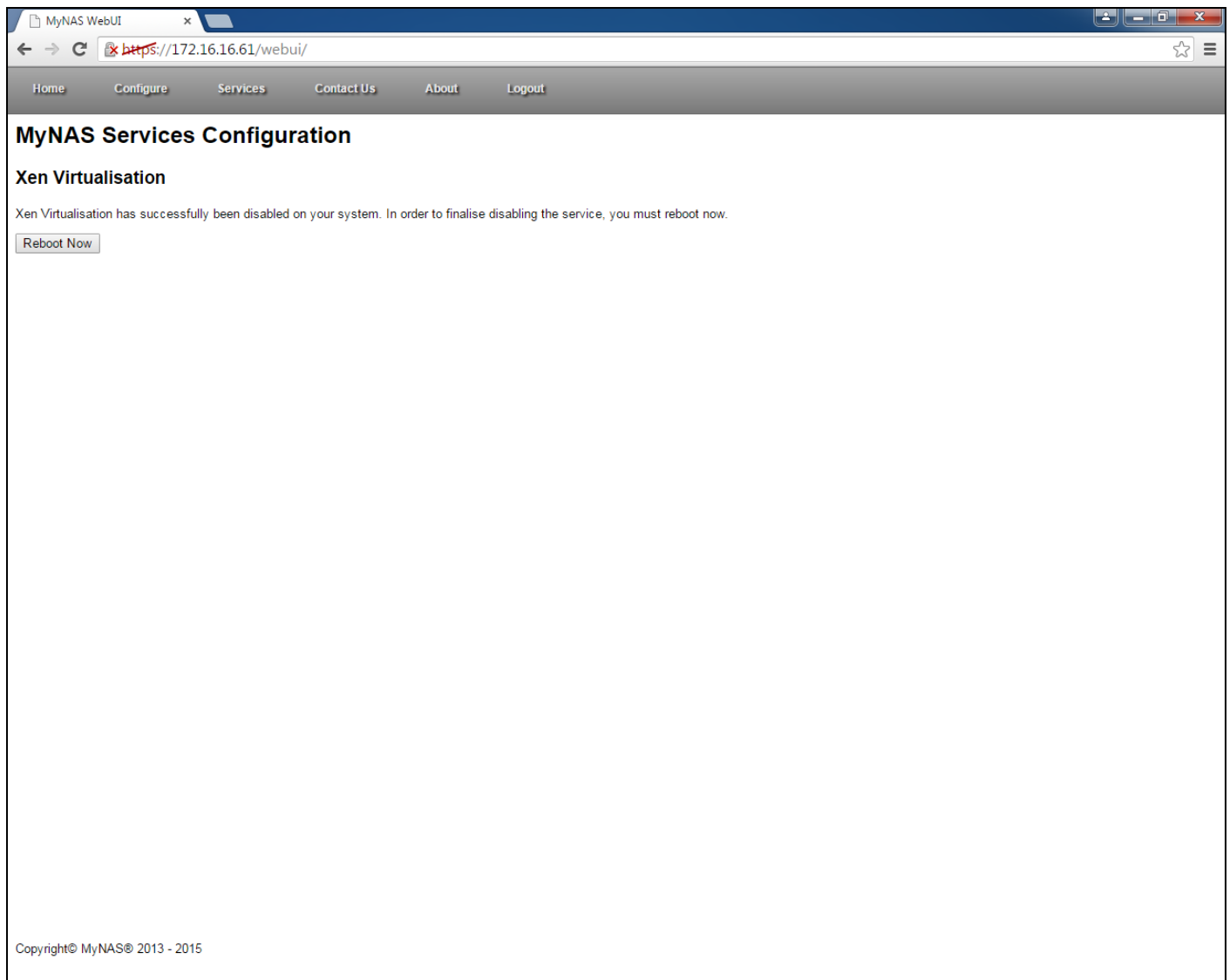
From the WebUI, simply click the appropriate button to Enable / Disable Xen Virtualisation. In order to do this, MyNAS will run through a number of pre-configuration checks:



In order to proceed with disabling Xen Virtualisation, all pre-configuration checks need to be successful.



Once all pre-configuration checks are complete and successful, click 'Next'.



Once the configuration is complete you will need to reboot MyNAS to finalise the disabling of Xen Virtualisation.

Enable / Disable Local ownCloud Server

What is ownCloud?

ownCloud is a self-hosted file sync and share server. It provides access to your data through a web interface, sync clients or WebDAV while providing a platform to view, sync and share across devices easily—all under your control. ownCloud's open architecture is extensible via a simple but powerful API for applications and plugins and it works with any storage.

You can share one or more files and folders on your computer, and synchronize them with your ownCloud server. Place files in your local shared directories, and those files are immediately synchronized to the server and to other devices using the ownCloud Desktop Sync Client, Android app, or iOS app.

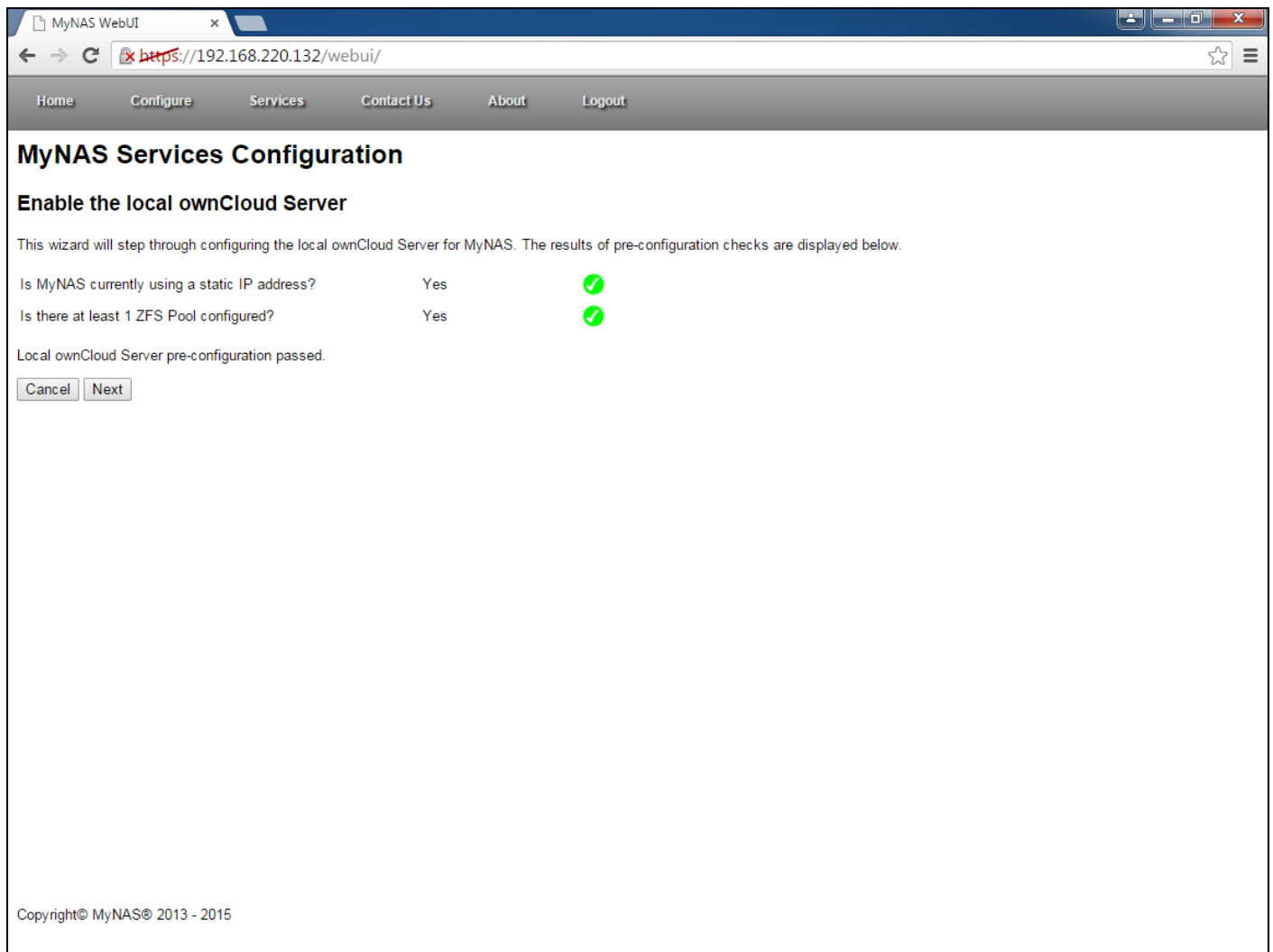
ownCloud is integrated into MyNAS so that:

- Your important files are stored on a ZFS file system for file integrity
- You can share these files out to your mobile devices or sync between devices using the ownCloud clients

For further details regarding ownCloud, visit: <https://owncloud.org/>

Enabling the local ownCloud Server

From the WebUI, select the Services Configuration menu and simply click the appropriate button to Enable / Disable Local ownCloud Server. In order to do this, MyNAS will run through a number of pre-configuration checks:



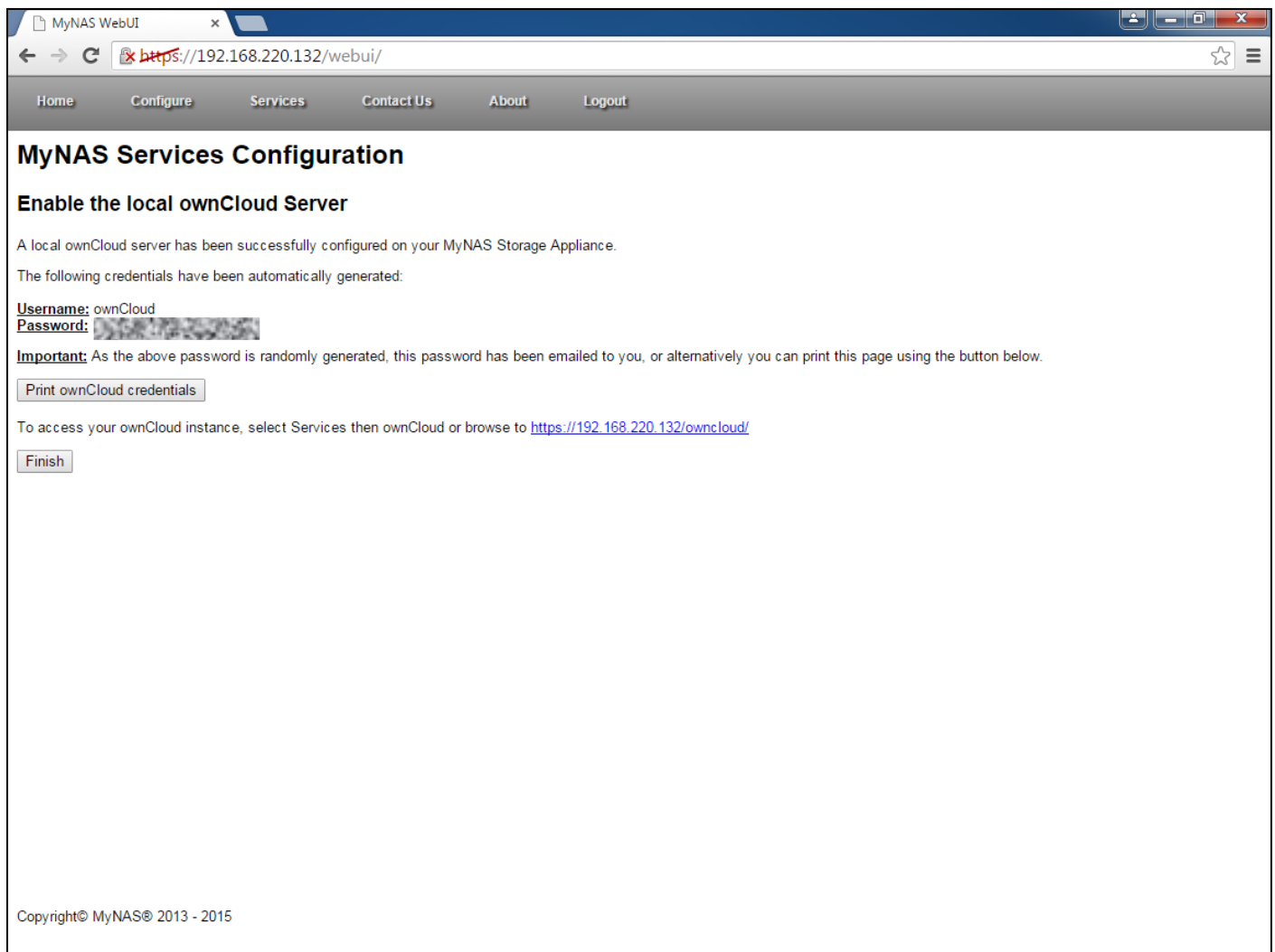
If the pre-checks are all OK, click 'Next' to continue.

Depending on the ZFS Pool configuration, if there are more than 1 ZFS Pool configured, MyNAS will ask which ZFS Pool should be used for the base ownCloud data:

The screenshot displays the MyNAS WebUI interface. At the top, there is a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main heading is "MyNAS Services Configuration". Below this, the text "Select which ZFS Pool to use for ownCloud:" is followed by a dropdown menu. The dropdown menu is open, showing four options: "- Select ZFS Pool -", "- Select ZFS Pool -", "storage0", and "storage1". Below the dropdown menu are two buttons: "Cancel" and "Next". At the bottom left of the page, the copyright notice "Copyright© MyNAS® 2013 - 2015" is visible.

Select the applicable storage pool to use for ownCloud and click 'Next'. MyNAS will now configure ownCloud on your MyNAS Storage Appliance.

Once configured, the following will be displayed:

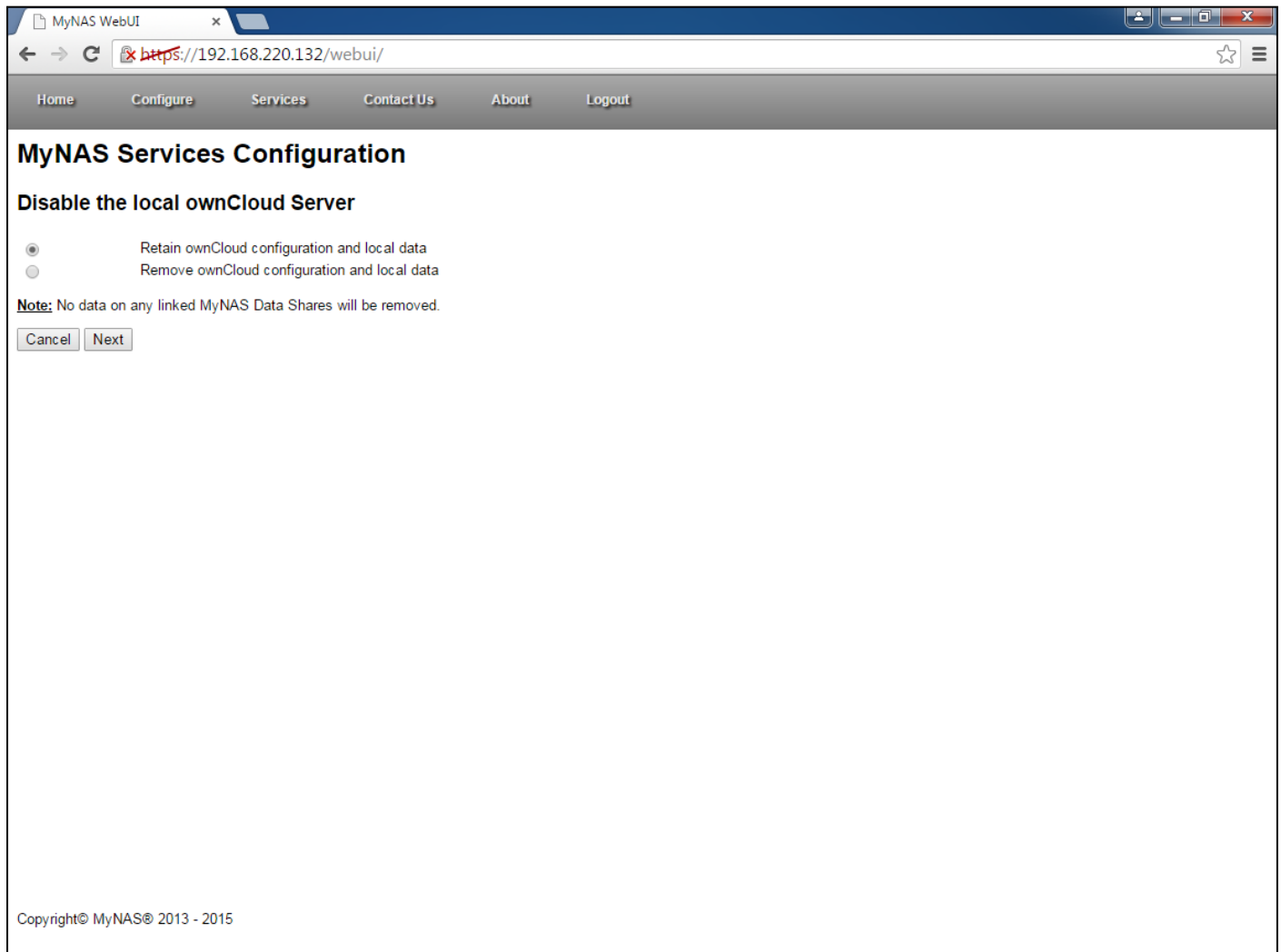


Note: A random password is generated for the ownCloud user account for initial access. This password can however be changed when logged into the local ownCloud instance.

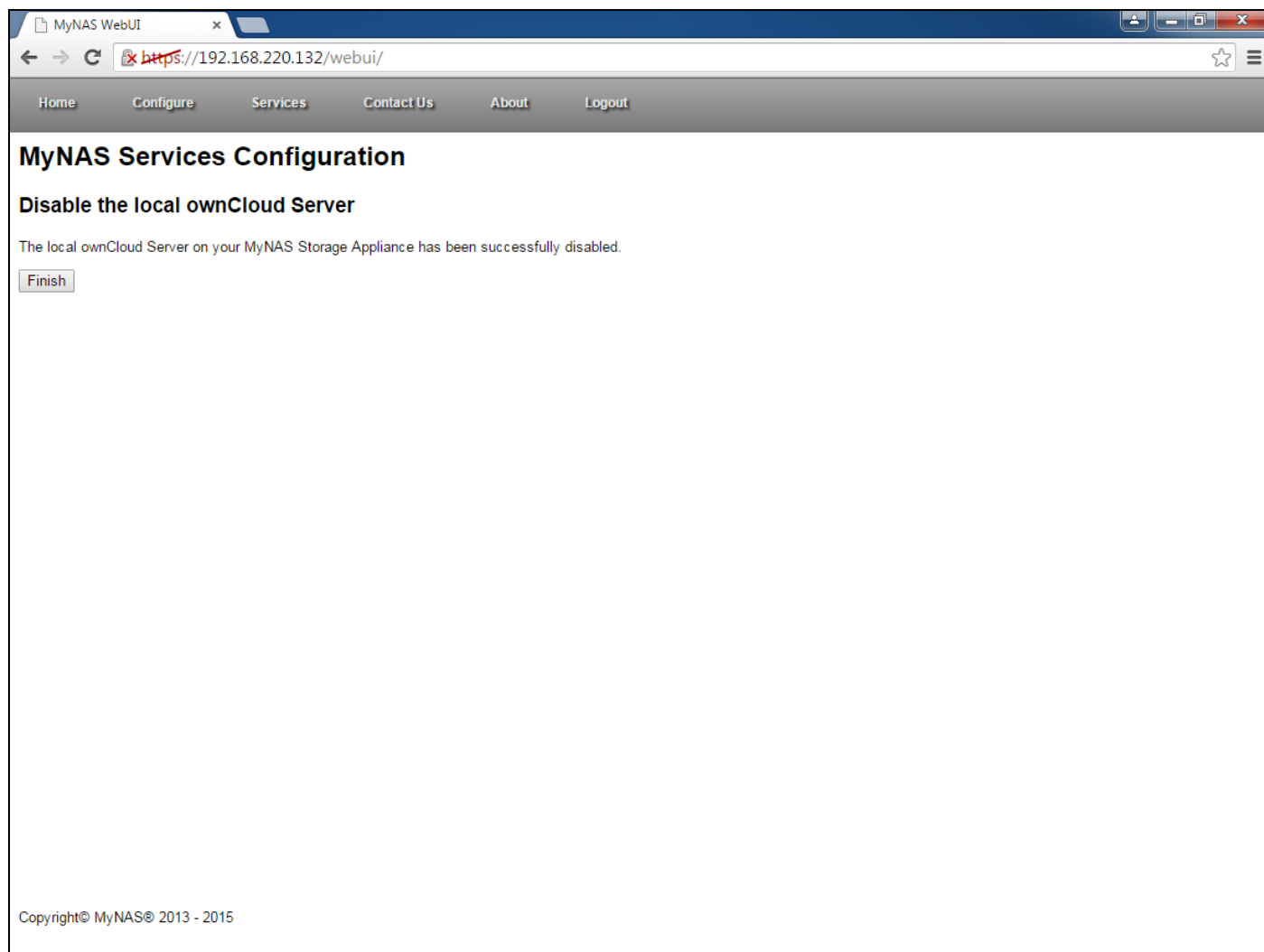
Click Finish to close the wizard.

Disabling the local ownCloud Server

From the WebUI, select the Services Configuration menu and simply click the Disable Local ownCloud Server button and the following will be displayed:



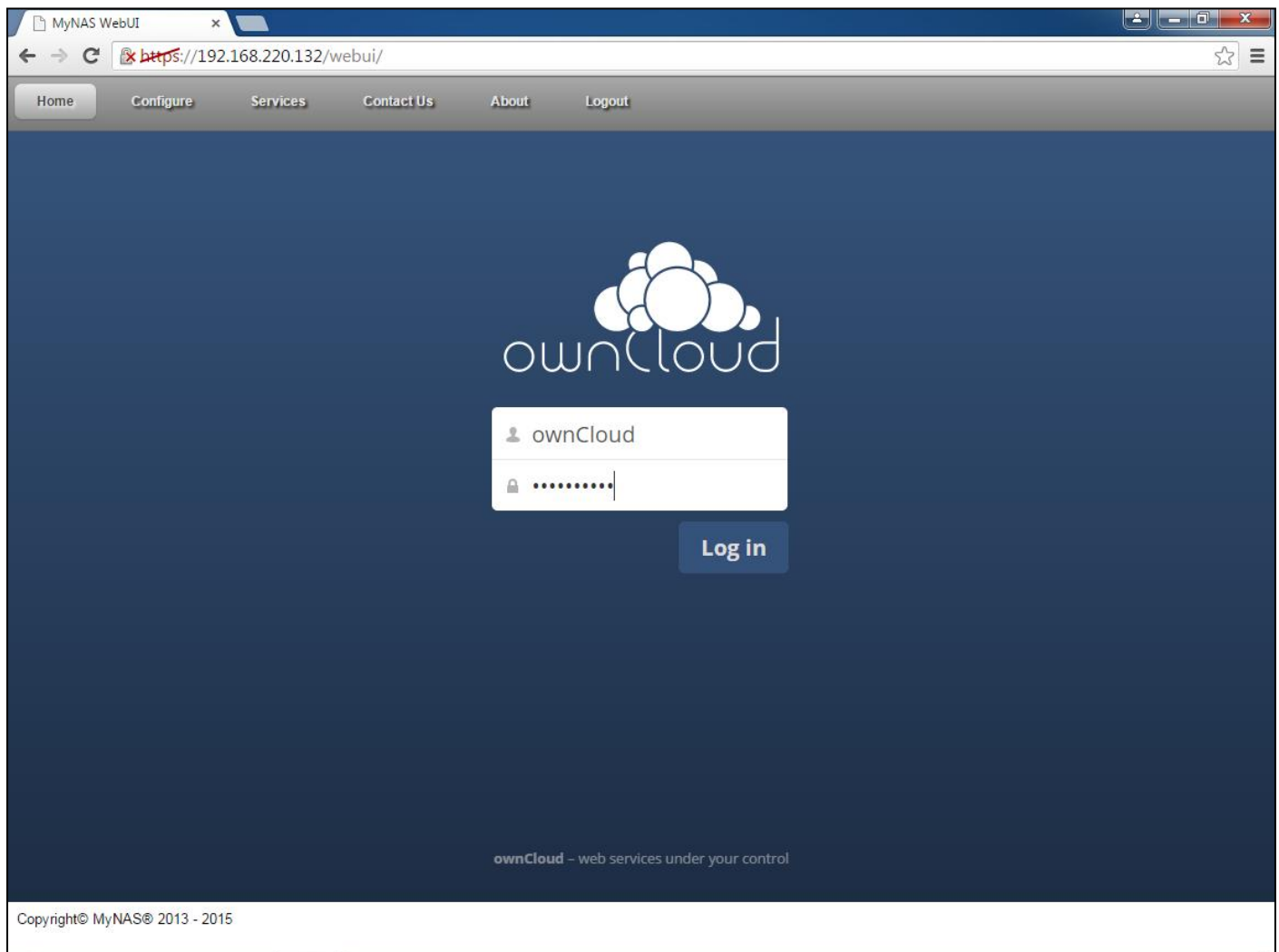
Select the applicable option and click 'Next'



Click 'Finish' to complete the wizard.

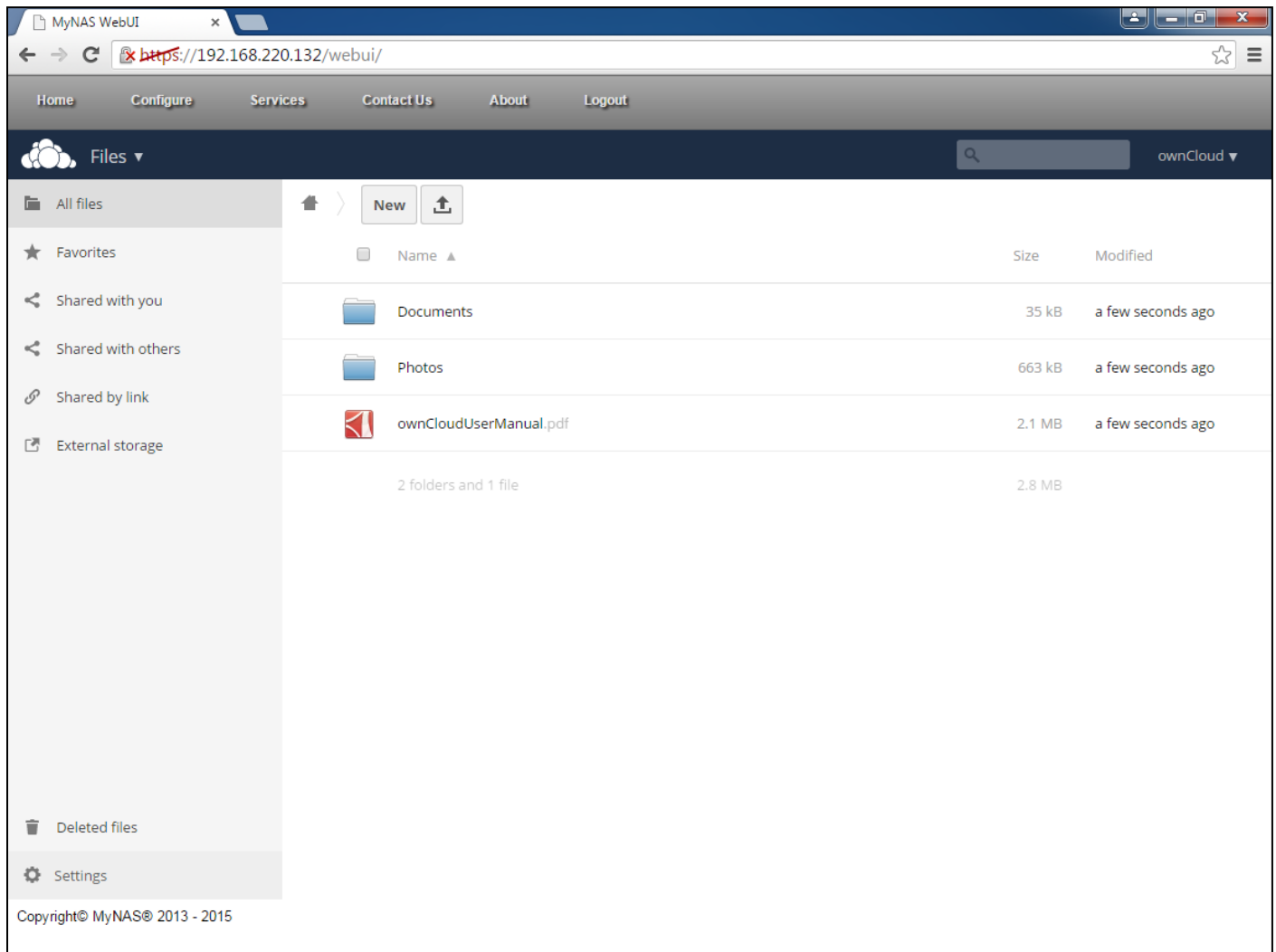
Using your Local ownCloud Server

When the Local ownCloud Server is enabled, click on the 'Services' menu, then the 'ownCloud' drop down to access your local ownCloud server:



Type in your credentials as generated when enabling the local ownCloud Server and click the 'Log in' button.

Once you login, you will be presented with the following screen with a welcome banner. Close the welcome banner to continue with using the local ownCloud server:

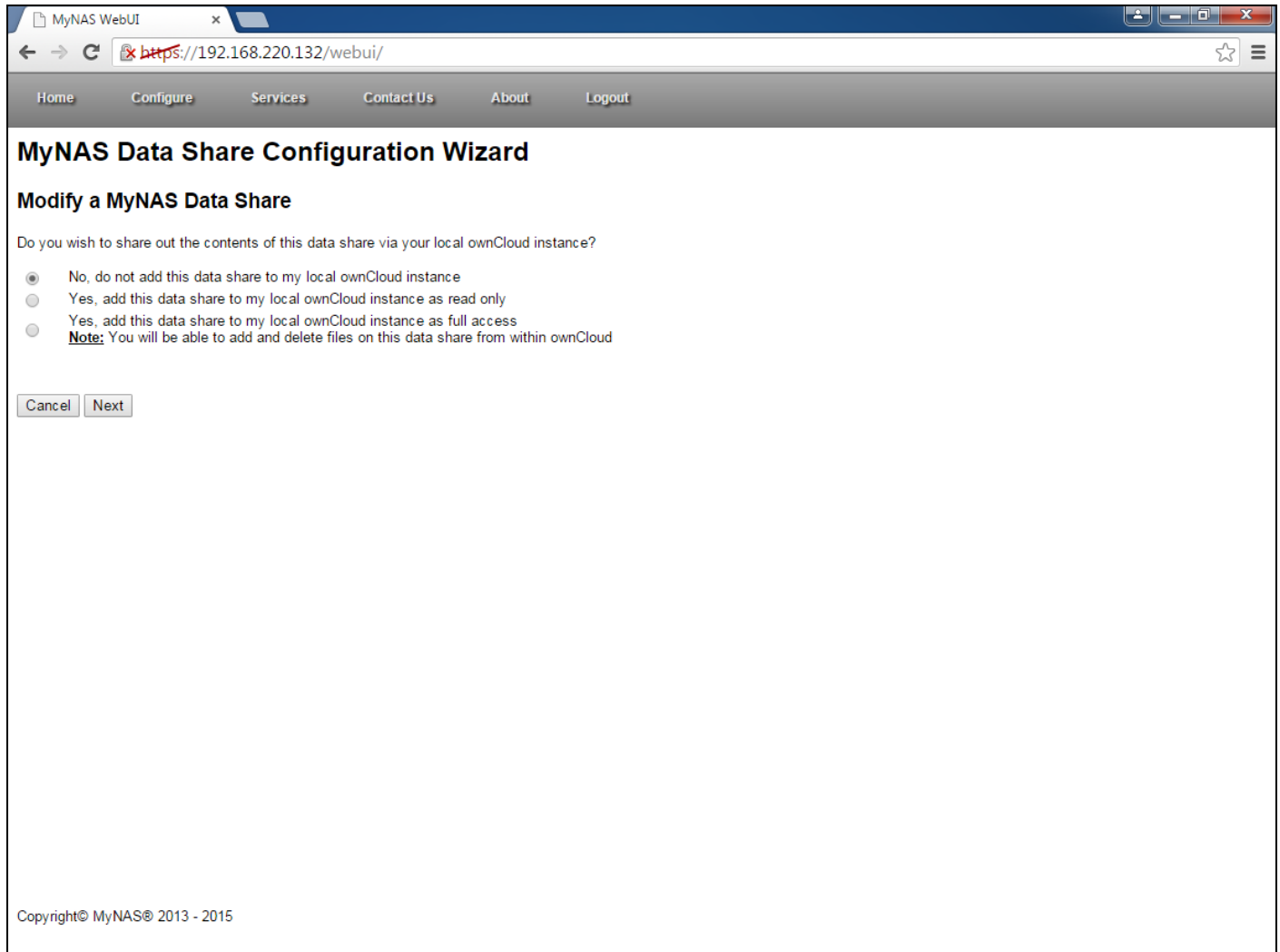


Refer to the ownCloud User Manual on using ownCloud.

Adding a Data Share to ownCloud

The easiest way to integrate your existing MyNAS Data Share's into ownCloud is to run through the Modify Data Share Configuration Wizard.

Select the applicable data share, and follow the wizard through modifying the options. As your local ownCloud Server is now configured, a new modify option is presented:



The screenshot shows a web browser window titled "MyNAS WebUI" with the address bar displaying "https://192.168.220.132/webui/". The navigation menu includes "Home", "Configure", "Services", "Contact Us", "About", and "Logout". The main heading is "MyNAS Data Share Configuration Wizard". Below it, the section is "Modify a MyNAS Data Share". The question posed is "Do you wish to share out the contents of this data share via your local ownCloud instance?". There are three radio button options: "No, do not add this data share to my local ownCloud instance", "Yes, add this data share to my local ownCloud instance as read only", and "Yes, add this data share to my local ownCloud instance as full access". A note below the third option states: "Note: You will be able to add and delete files on this data share from within ownCloud". At the bottom of the form are "Cancel" and "Next" buttons. The footer of the page reads "Copyright© MyNAS® 2013 - 2015".

This allows you to add the data share as a read only link, or with full access allowing files to be uploaded through the ownCloud client to automatically sync onto your MyNAS Storage appliance.

Note: Once the Local ownCloud Server is enabled, the same option is available when creating a new data share.

Select the appropriate option for this Data Share and 'Click Next'

The screenshot shows a web browser window titled 'MyNAS WebUI' with the address bar displaying 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS Data Share Configuration Wizard'. Below it, the section is 'Modify a MyNAS Data Share'. A message states: 'The following settings have been requested for the modification of an existing MyNAS Data Share. Please confirm the requested items below:'. The settings are listed in two columns:

Modified Data Share Name:	Documents
Modified Data Share Comment:	No data share comment entered.
Modified Data Share Platform Access:	Windows: Yes Apple / OS X: No Linux / Unix: No
Modified Windows Data Share Password Protected:	No
Modified Windows Data Share Access Permissions:	Default access permissions will be used for everyone
Modified Data Share Data Importance:	Low
Modified Data Share DLNA Access:	No
Modified Data Share Snapshots:	No
Modified Local ownCloud Access:	Yes

At the bottom, there are two buttons: 'Cancel' and 'Save Settings'. The footer text reads 'Copyright© MyNAS® 2013 - 2015'.

Verify the modified settings, and click 'Save Settings' to make the change.

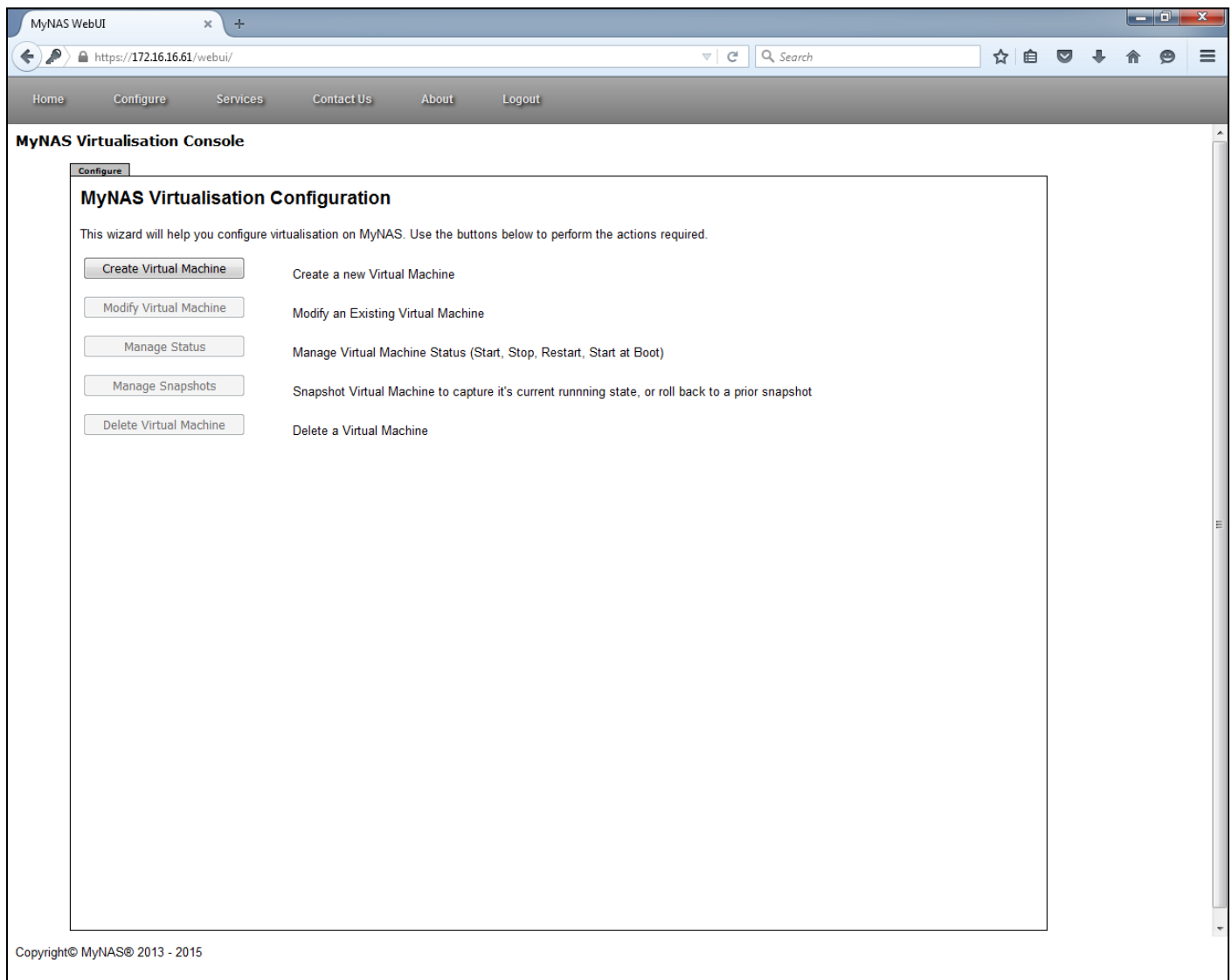
Open up the ownCloud interface again, and you can see that the files are now linked into ownCloud:

The screenshot displays the MyNAS WebUI interface in a web browser. The browser's address bar shows the URL <https://192.168.220.132/webui/>. The interface features a top navigation bar with links for Home, Configure, Services, Contact Us, About, and Logout. Below this is a dark blue header with the 'Files' section and a search bar. The main content area shows the 'Documents' folder, which contains two subfolders: 'ecryptfs' (2.5 MB) and 'SMPP' (1.2 MB). A summary row indicates '2 folders' with a total size of '3.7 MB'. The left sidebar provides navigation options: All files, Favorites, Shared with you, Shared with others, Shared by link, External storage, Deleted files, and Settings. The footer of the interface states 'Copyright© MyNAS® 2013 - 2015'.

Name ▲	Size	Modified
ecryptfs	2.5 MB	a few seconds ago
SMPP	1.2 MB	a few seconds ago
2 folders	3.7 MB	

Using Xen Virtualisation

Once Xen Virtualisation is configured and enabled, the Xen Virtualisation portal can be accessed by clicking on the 'Service' menu and clicking 'Virtualisation'. When selected the following will be displayed.



Virtualisation Console Prerequisites

Note: Java can no longer be used inside Google Chrome. For any virtualisation system access, it is recommended to use Firefox at this time.

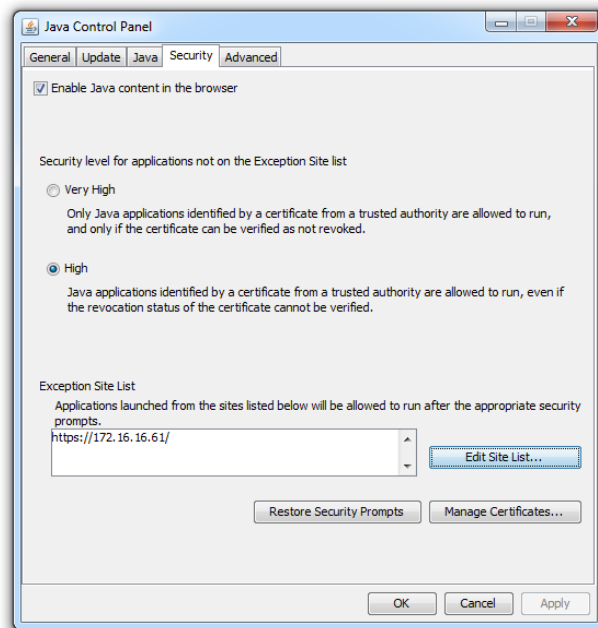
Java Version

In order to view the console of the virtual machines once created, Java is required to be installed on your local system, Java SE version 7 is required. To download Java SE version 7, visit <http://www.oracle.com/technetwork/java/javase/downloads/index.html>

The MyNAS WebUI has been tested using Java SE version 7 Update 80.

Note: The Java viewer for Xen is currently incompatible with Java SE version 8, however a solution is being worked on for this version of Java.

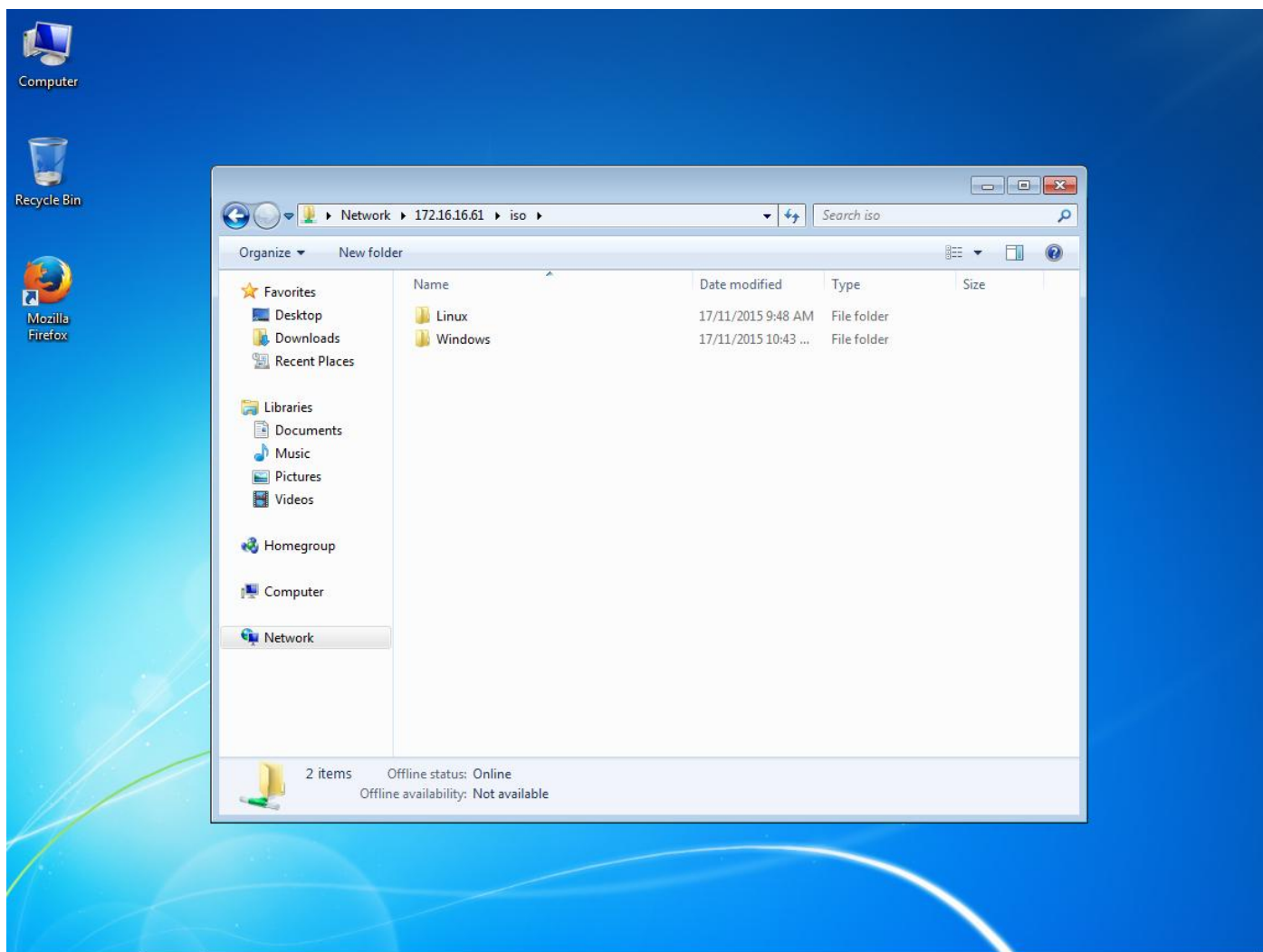
Additionally, due to Java and new enhanced security requirements, Java needs to be configured by adding your MyNAS host into the exception list as illustrated below:



This allows the Java applet to operate without being explicitly blocked due to the applet not being digitally signed.

Installation ISO Images

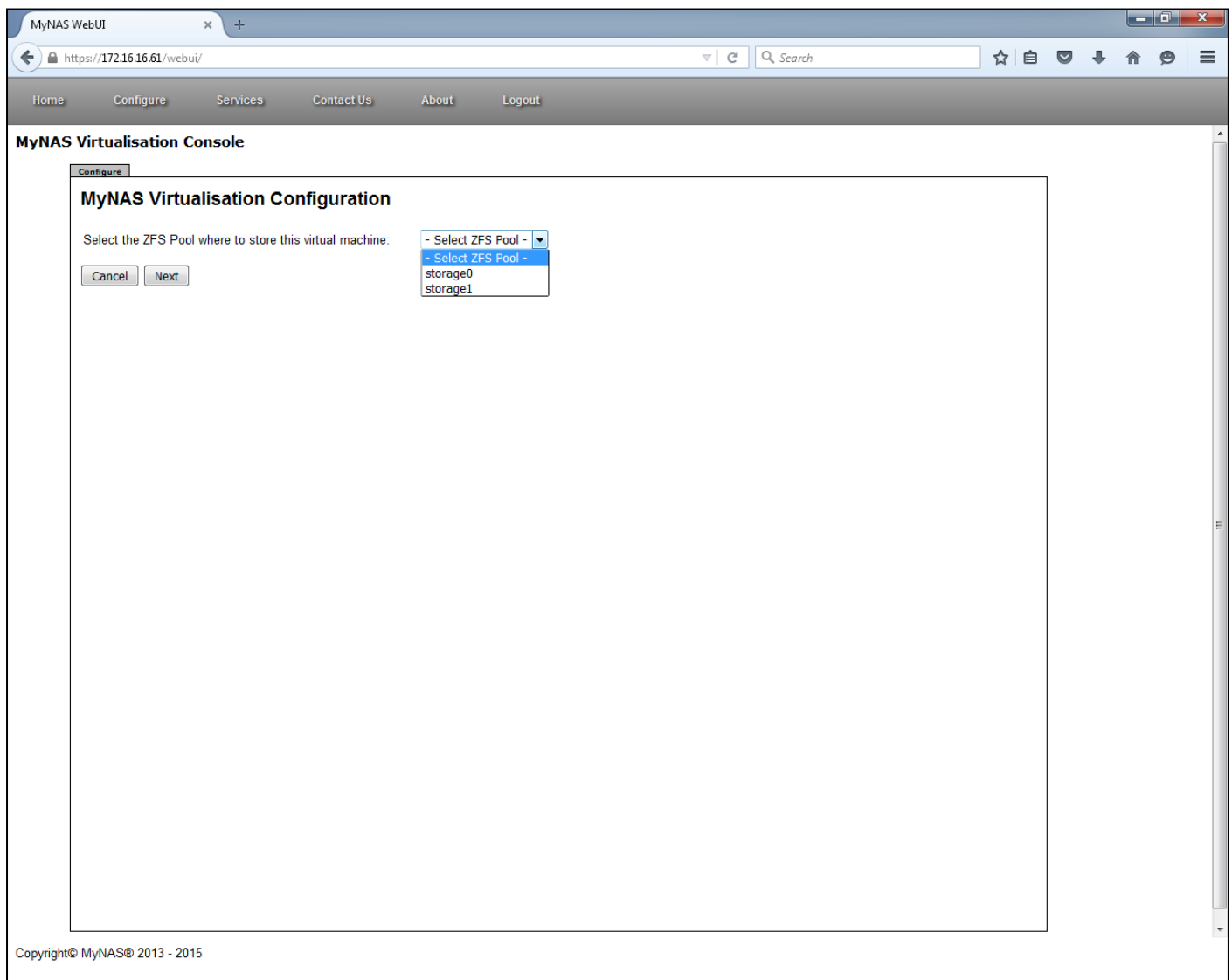
In order to create a virtual machine, the virtual machine requires to be installed via an ISO file. It is recommended to create a separate Data Share that is for the storage of the installation ISO files for your virtual machines. For the purpose of this section, a Data Share called 'iso' will be used, populated by Linux and Windows installation media.



Create a new Virtual Machine

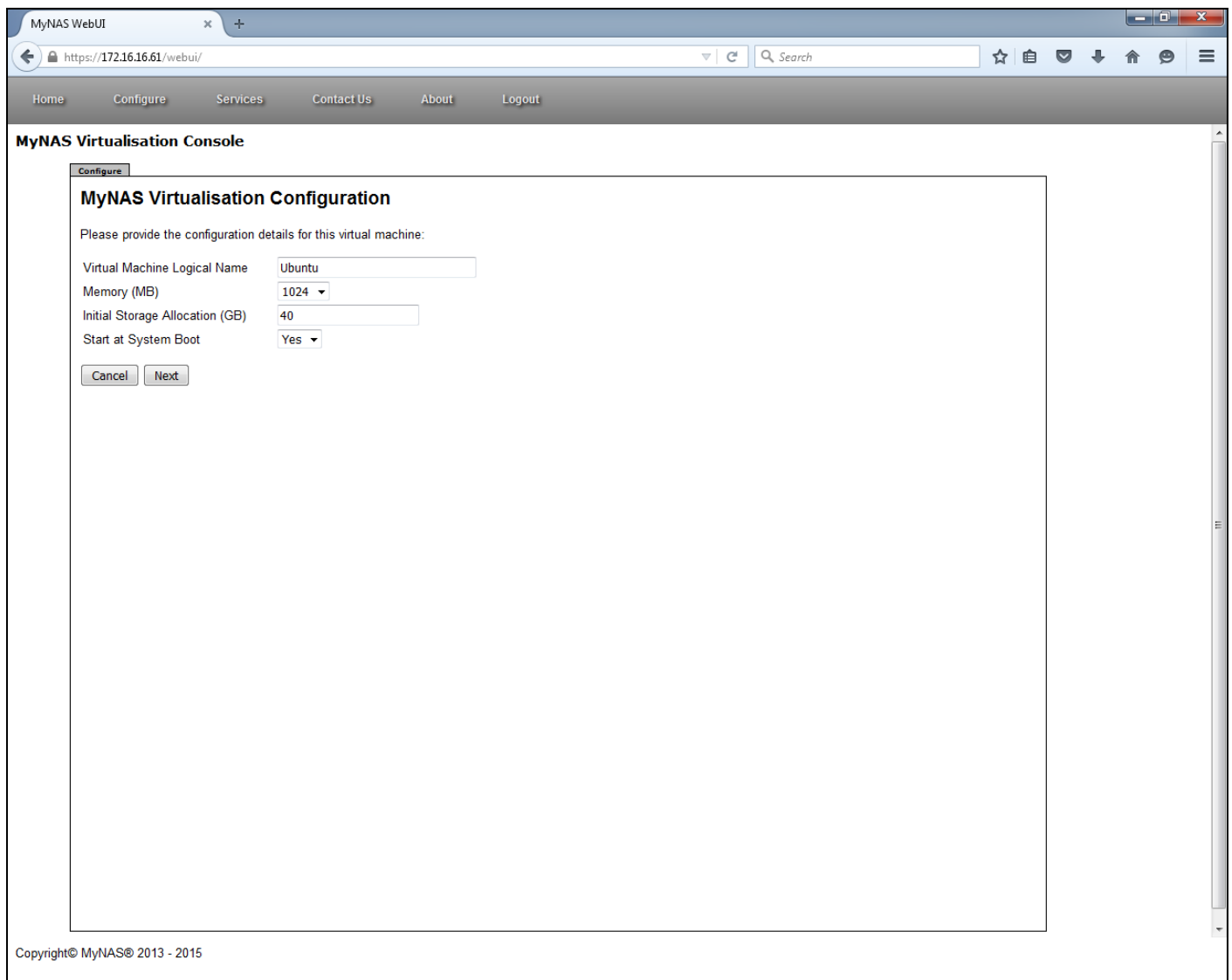
To create a new virtual machine, click on the 'Create Virtual Machine' button to start the VM creation wizard

If there are multiple ZFS Pools to select, select the appropriate ZFS pool to use for this virtual machine



Once the right ZFS pool is selected, click 'Next'

Type in the appropriate details for the new virtual machine



The screenshot shows a web browser window with the MyNAS WebUI. The address bar shows the URL `https://172.16.16.61/webui/`. The navigation menu includes Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Virtualisation Console" and contains a "Configure" tab. Below the tab is the "MyNAS Virtualisation Configuration" section, which prompts the user to "Please provide the configuration details for this virtual machine:". The configuration fields are as follows:

Field	Value
Virtual Machine Logical Name	Ubuntu
Memory (MB)	1024
Initial Storage Allocation (GB)	40
Start at System Boot	Yes

At the bottom of the configuration section are two buttons: "Cancel" and "Next".

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Once the details are entered, click 'Next'

Select the Data Share where the ISO to install the virtual machine can be found

The screenshot shows a web browser window with the address bar displaying 'https://172.16.16.61/webui/'. The browser's address bar includes a search icon and a search input field. The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled 'MyNAS Virtualisation Console' and contains a 'Configure' tab. Below the tab is the 'MyNAS Virtualisation Configuration' section. It instructs the user to 'Please select the Data Share where the ISO files can be found to install this virtual machine from:'. There is a 'Data Share:' label followed by a dropdown menu. The dropdown menu is open, showing three options: '- Select Data Share -', '- Select Data Share -', and 'ISO'. Below the dropdown are 'Cancel' and 'Next' buttons. At the bottom left of the page, there is a copyright notice: 'Copyright© MyNAS® 2013 - 2015'.

MyNAS WebUI

https://172.16.16.61/webui/

Home Configure Services Contact Us About Logout

MyNAS Virtualisation Console

Configure

MyNAS Virtualisation Configuration

Please select the Data Share where the ISO files can be found to install this virtual machine from:

Data Share: - Select Data Share -

- Select Data Share -

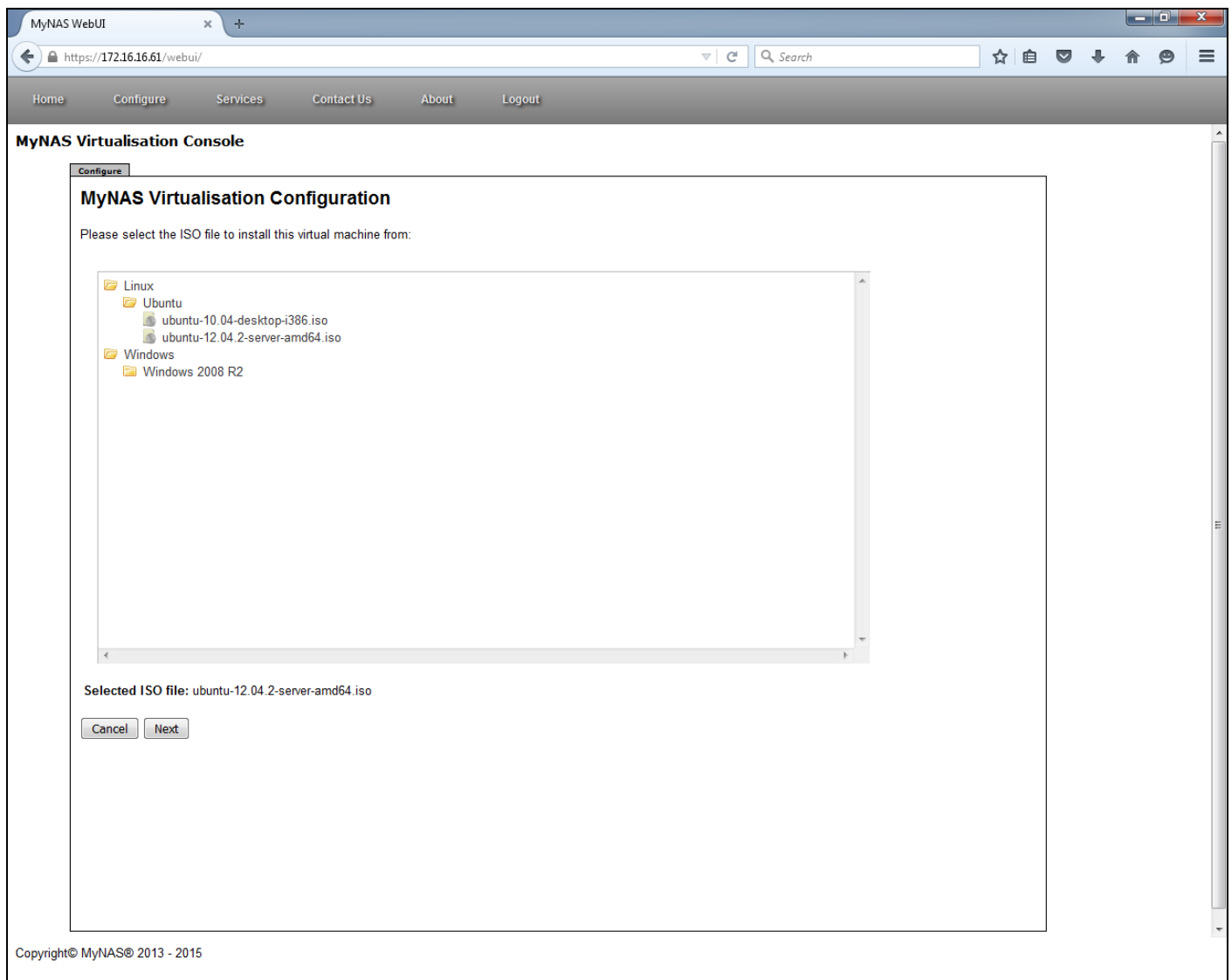
ISO

Cancel Next

Copyright© MyNAS® 2013 - 2015

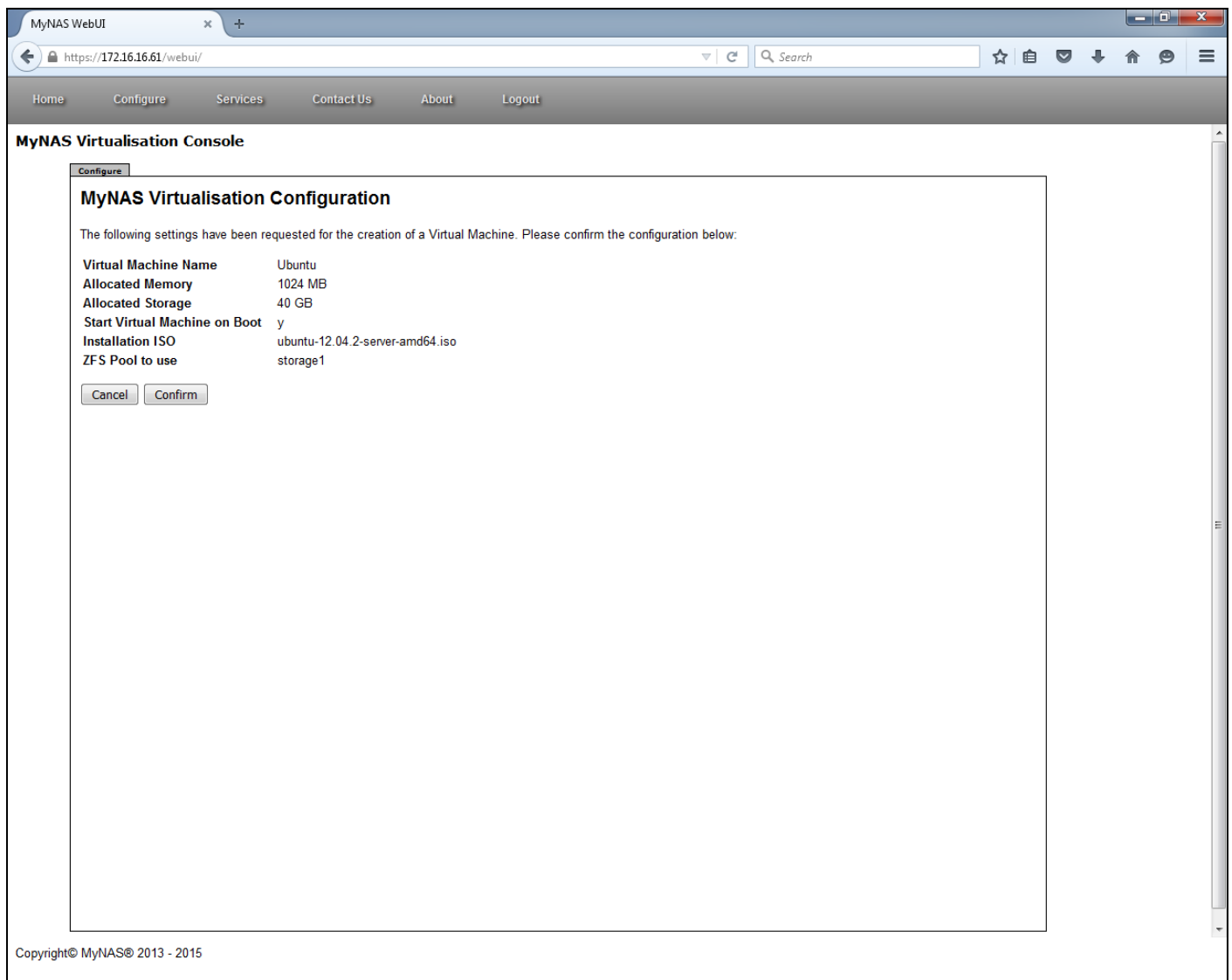
Once the correct Data Share is selected, click 'Next'

Select the ISO file to install the virtual machine with



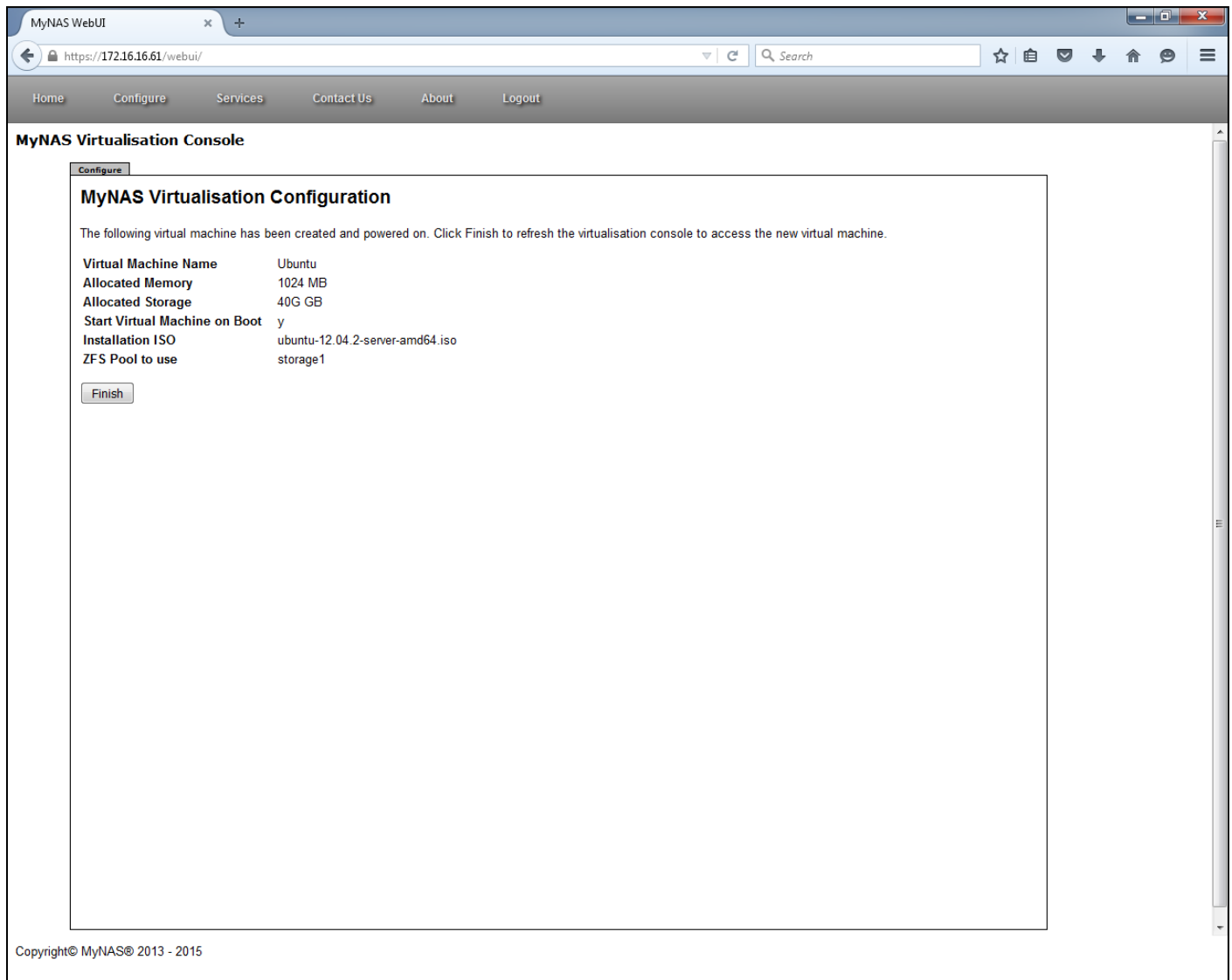
To select the ISO file, double click the file name. Once selected, click 'Next'

Confirm the virtual machine settings as entered



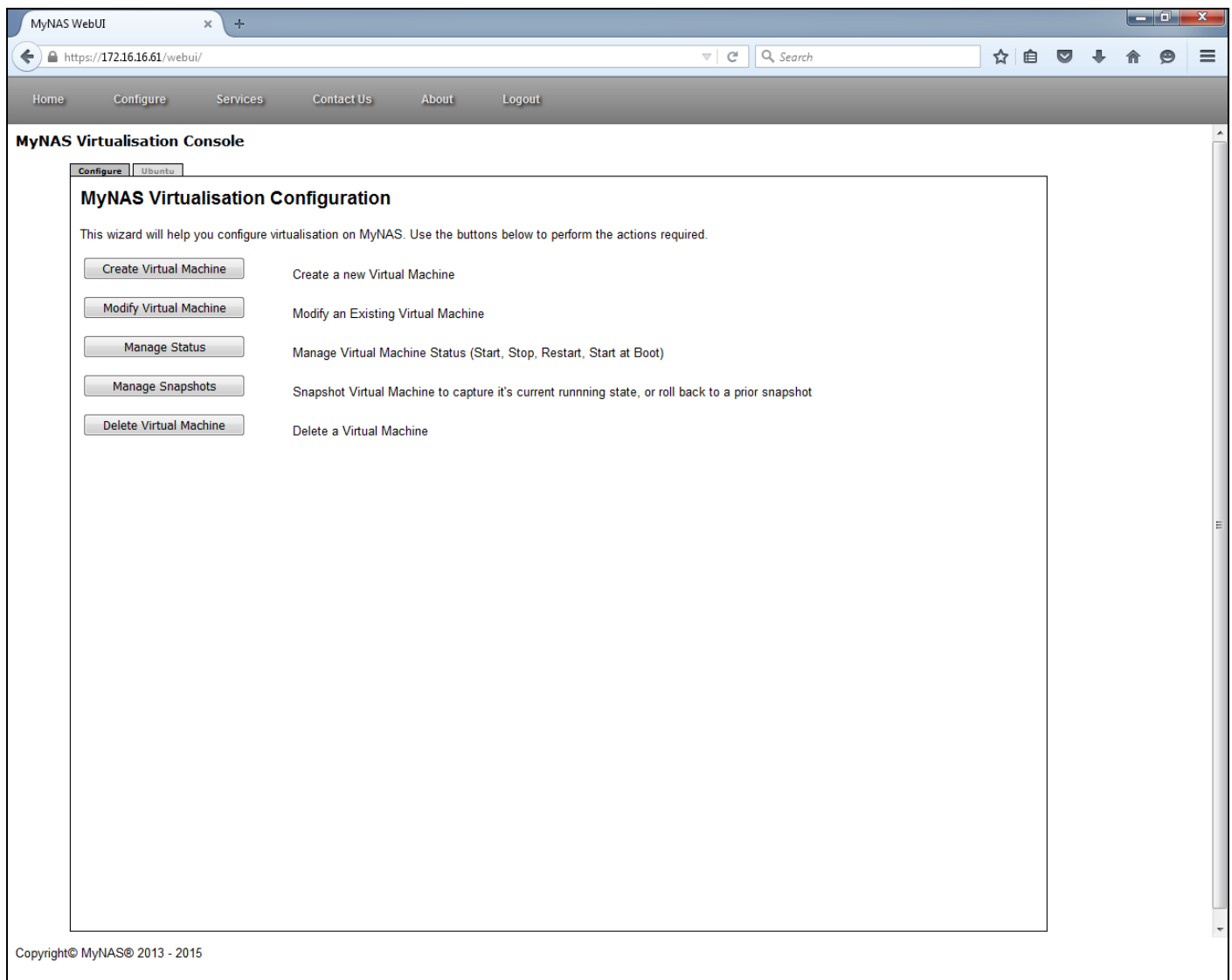
If the settings selected are OK, click 'Confirm'.

The virtual machine will now be created. If there are enough resources available, the virtual machine will be powered on.



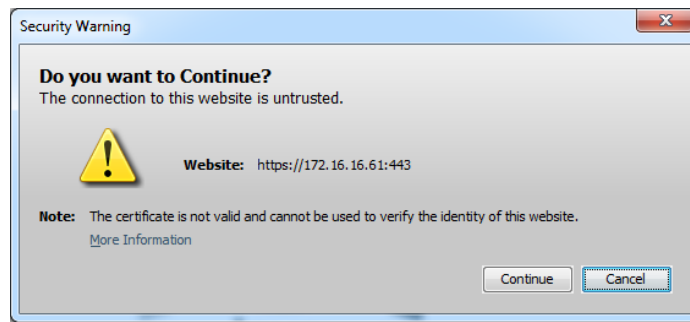
Click 'Finish' to complete the wizard, which will take you back to the virtualisation configuration page.

On loading the configuration page, a new tab will be displayed, which represents the new virtual machine.

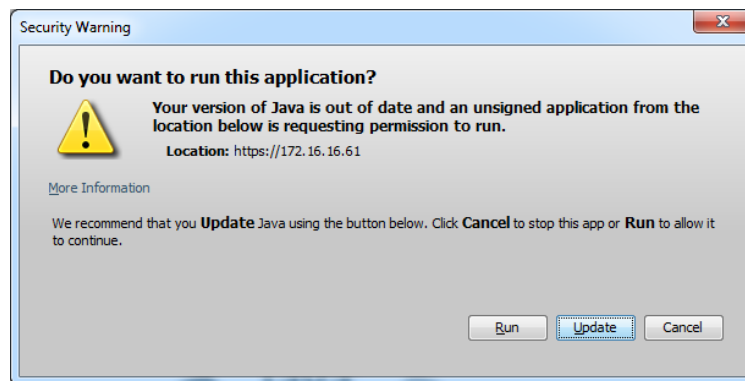


Click the tab of the virtual machine name to access the console of the new virtual machine.

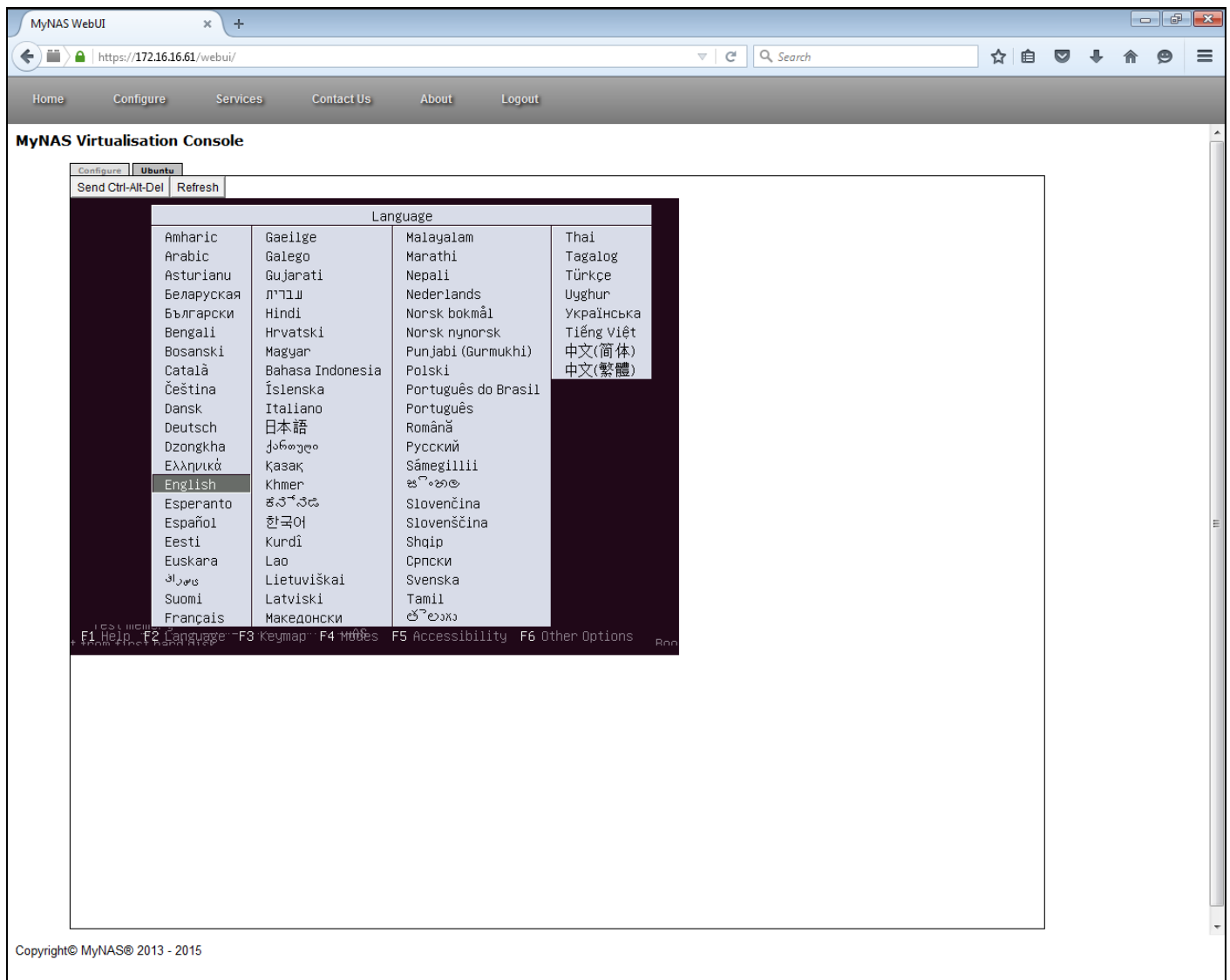
A Java warning window will be displayed - click continue



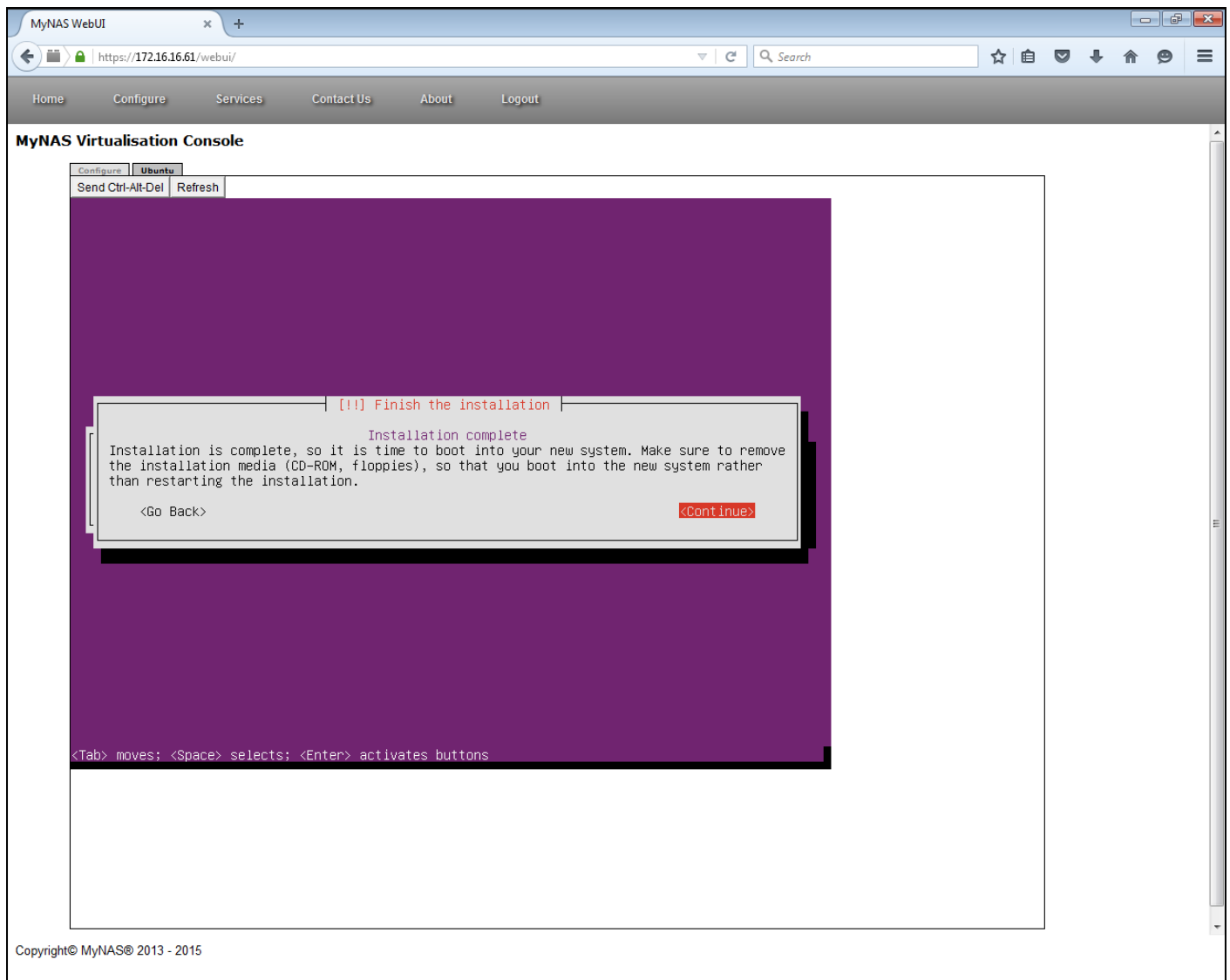
A second Java security window will then be displayed



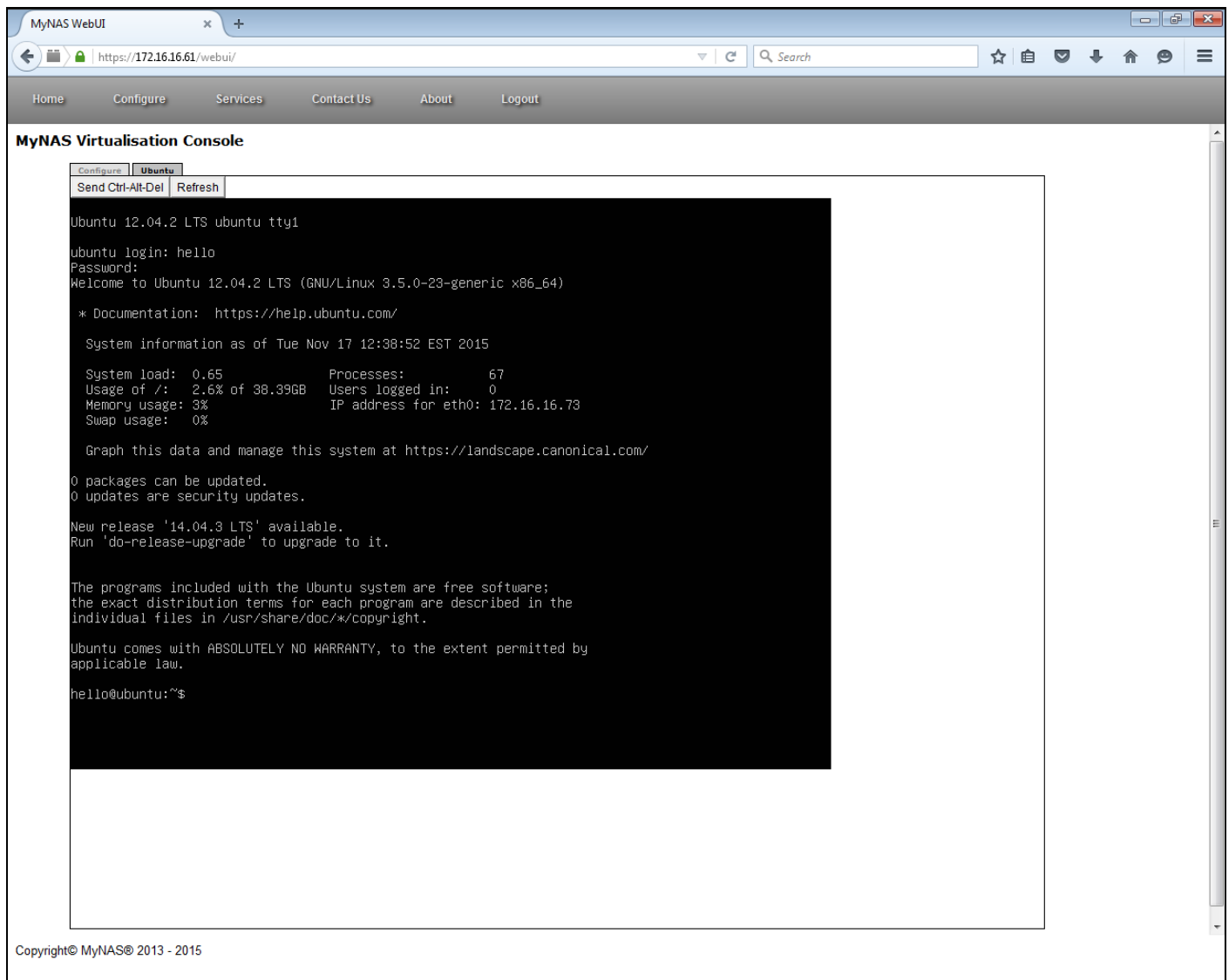
Click Run, and the Java applet will run, displaying the console of the virtual machine



Install the virtual machine as per normal for that operating system



Once the OS is installed on the virtual machine it should be ready to use.



Note: Depending on the OS, it may also be best to shut down the OS to perform the following operations:

1. Change the boot order of the virtual machine
2. Disconnect the installation ISO file from the virtual machine

Changing the boot order of the virtual machine

To change the boot order, from the MyNAS Virtual Configuration, select to 'Modify Virtual Machine'

The screenshot shows the MyNAS WebUI interface. At the top, there's a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. Below this is the 'MyNAS Virtualisation Console' section. It has two tabs: 'Configure' (selected) and 'Ubuntu'. The main content area is titled 'MyNAS Virtualisation Configuration' and contains the following text:

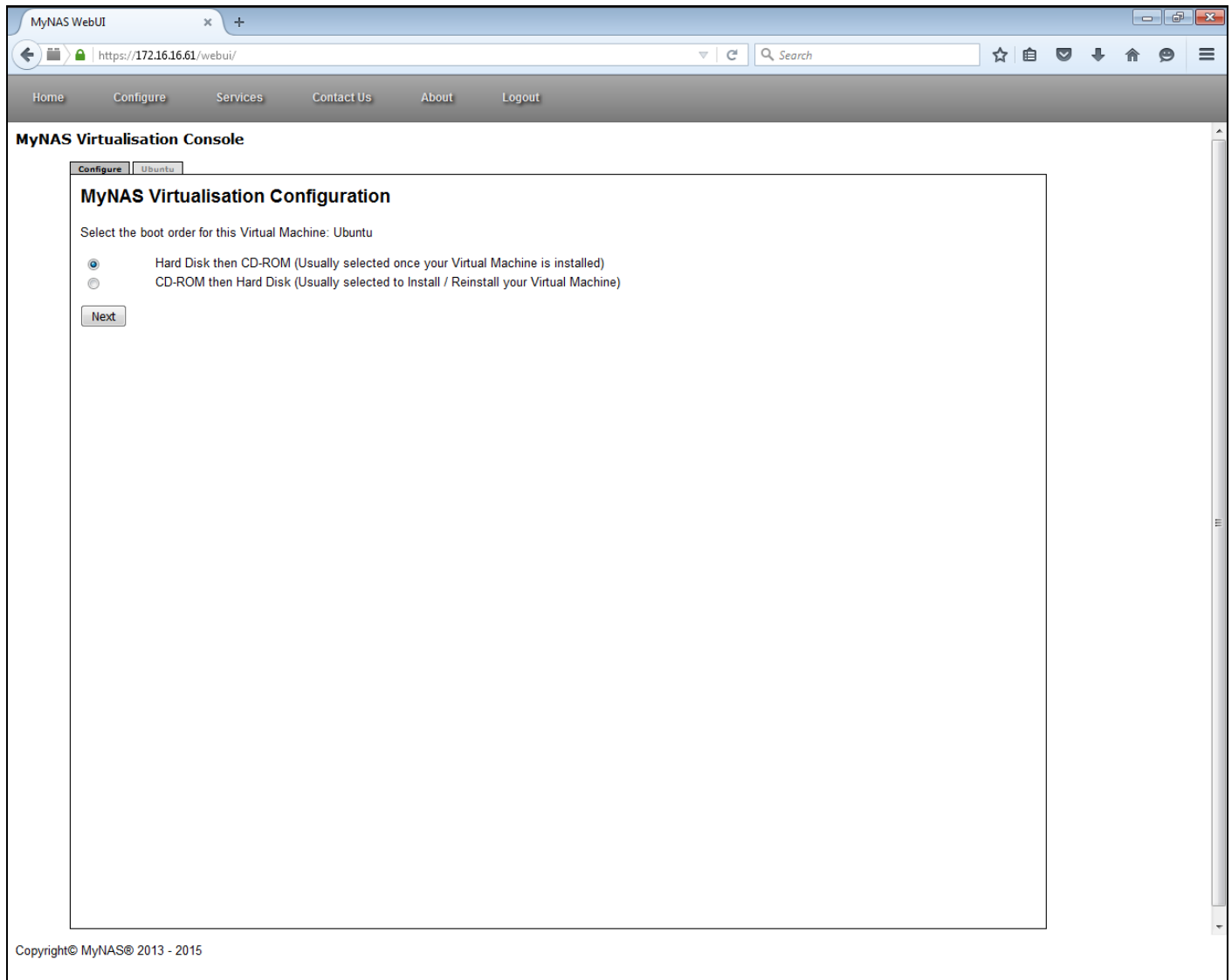
Modify an individual virtual machine using the table below.

Note: Some modifications can only be performed when the virtual machine is powered off.

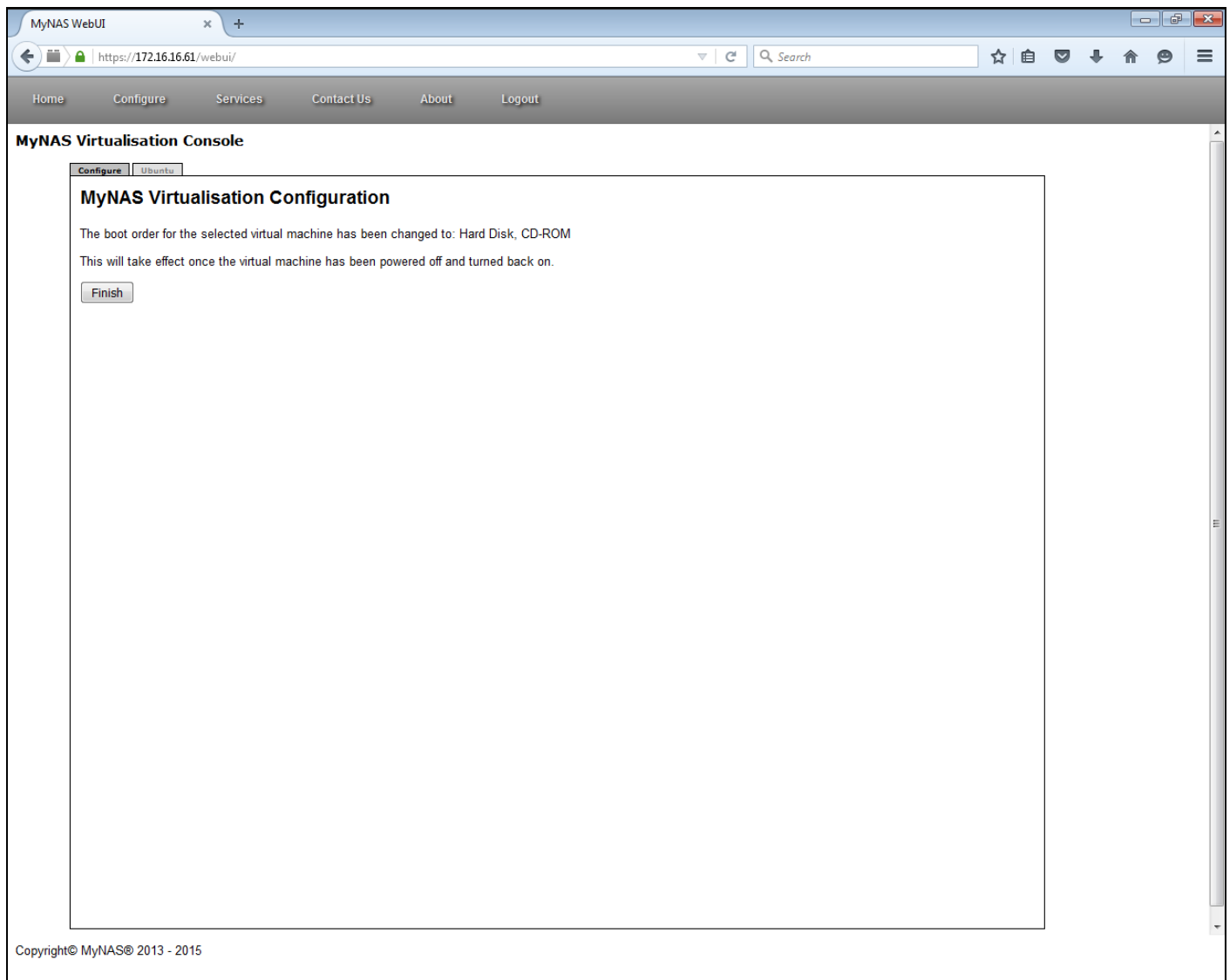
VM Name	Current Status	Action
Ubuntu	On	<div>Change Boot Order <input type="button" value="Modify Virtual Machine"/></div>

At the bottom left of the page, there is a copyright notice: Copyright© MyNAS® 2013 - 2015.

Select the appropriate action - in this case, changing the boot order, and click the 'Modify Virtual Machine' button.



Select the appropriate boot order for the virtual machine, and click 'Next'

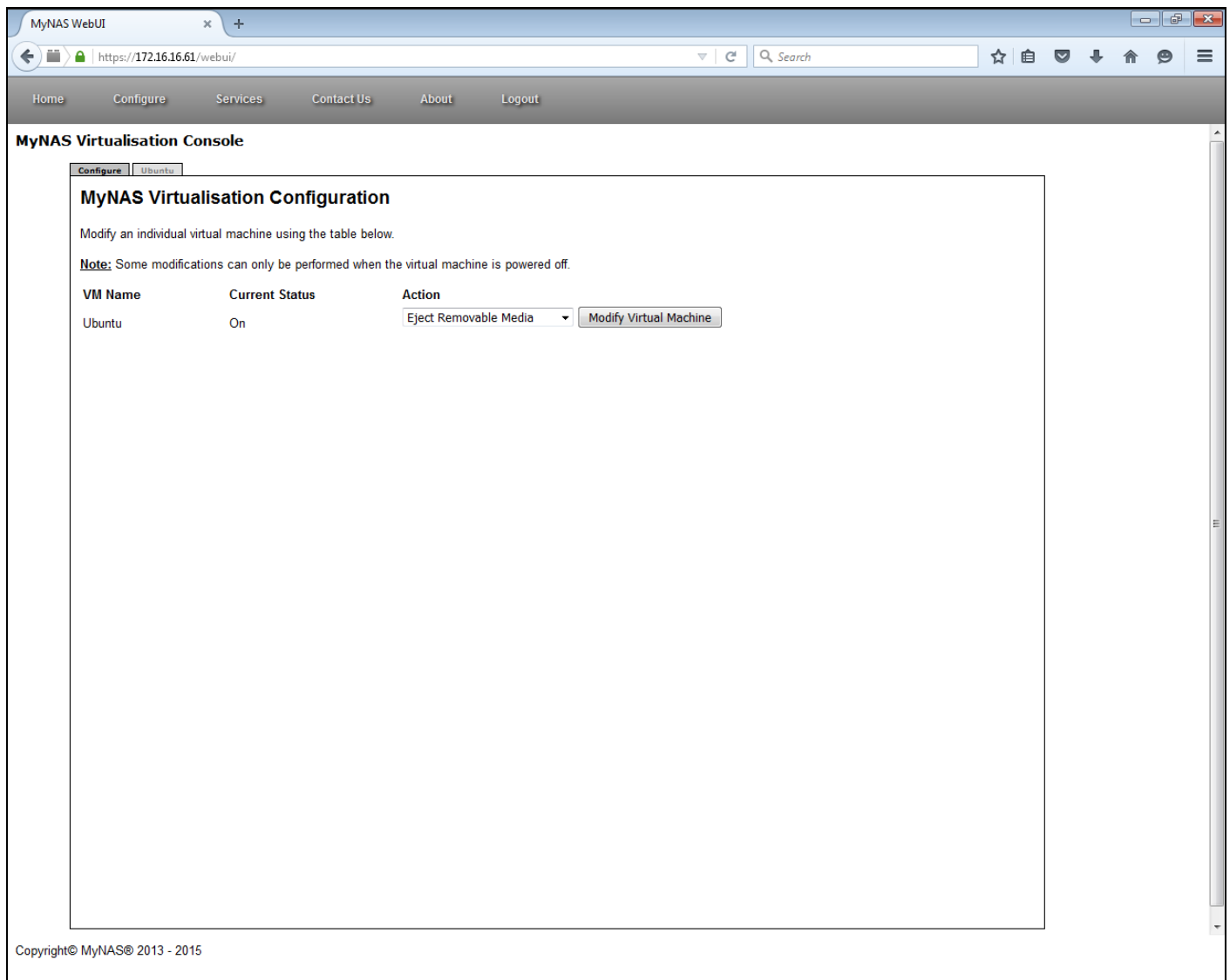


The selected option is processed. Click 'Finish' to complete.

Note: Any change in this setting is only reflected once the virtual machine is powered off and powered back on.

Disconnecting the installation ISO from the virtual machine

To disconnect the installation ISO, from the MyNAS Virtual Configuration, select to 'Modify Virtual Machine'



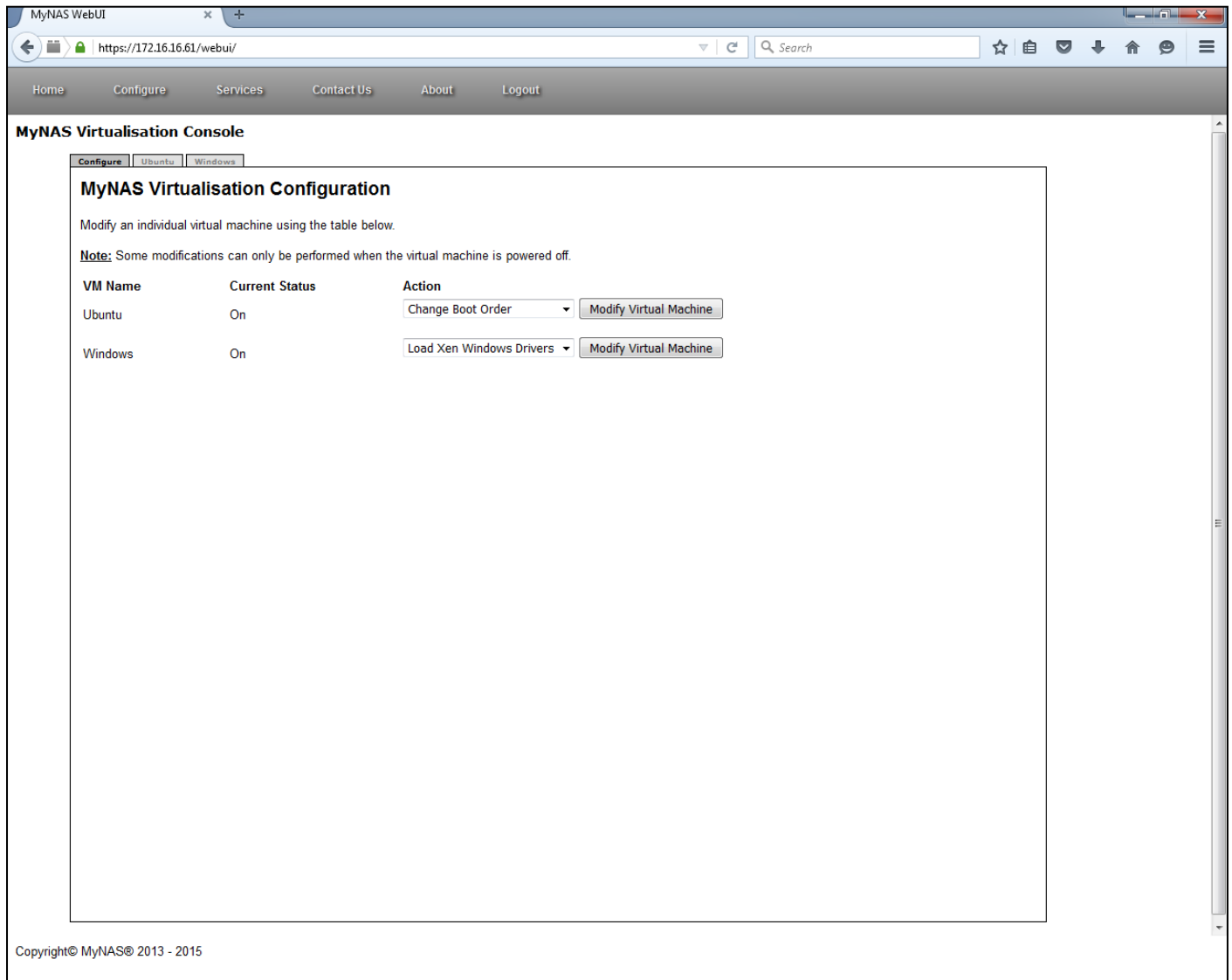
Select the appropriate action - in this case, ejecting removable media, and click the 'Modify Virtual Machine' button.

The action will be processed and you will be returned to the modify action selection.

Windows Xen Virtualisation Drivers

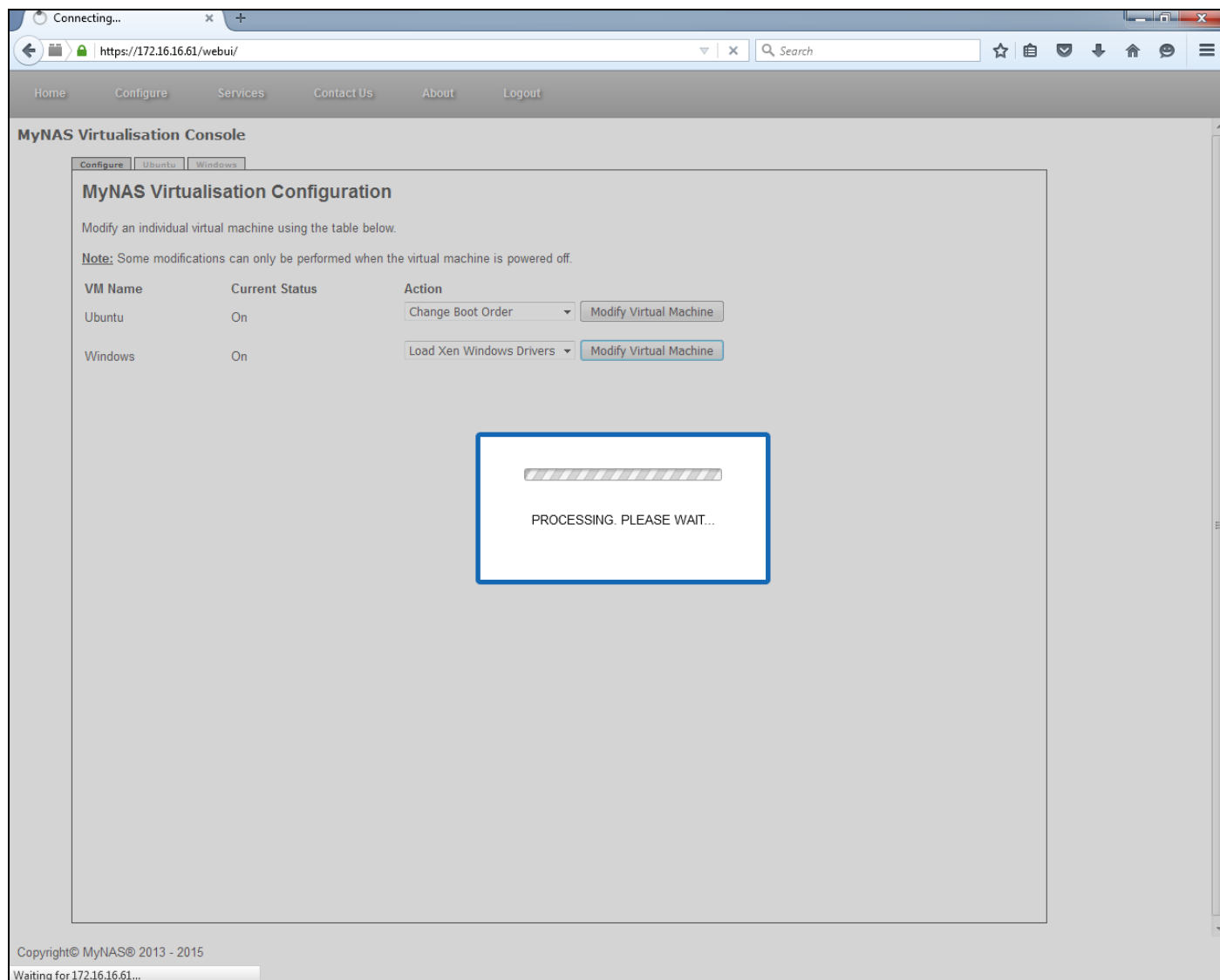
If a Windows operating system is running on MyNAS under Xen, to get the best performance from the Windows system, it is advisable to load the Xen virtualisation drivers.

From the MyNAS Virtual Configuration, select to 'Modify Virtual Machine'

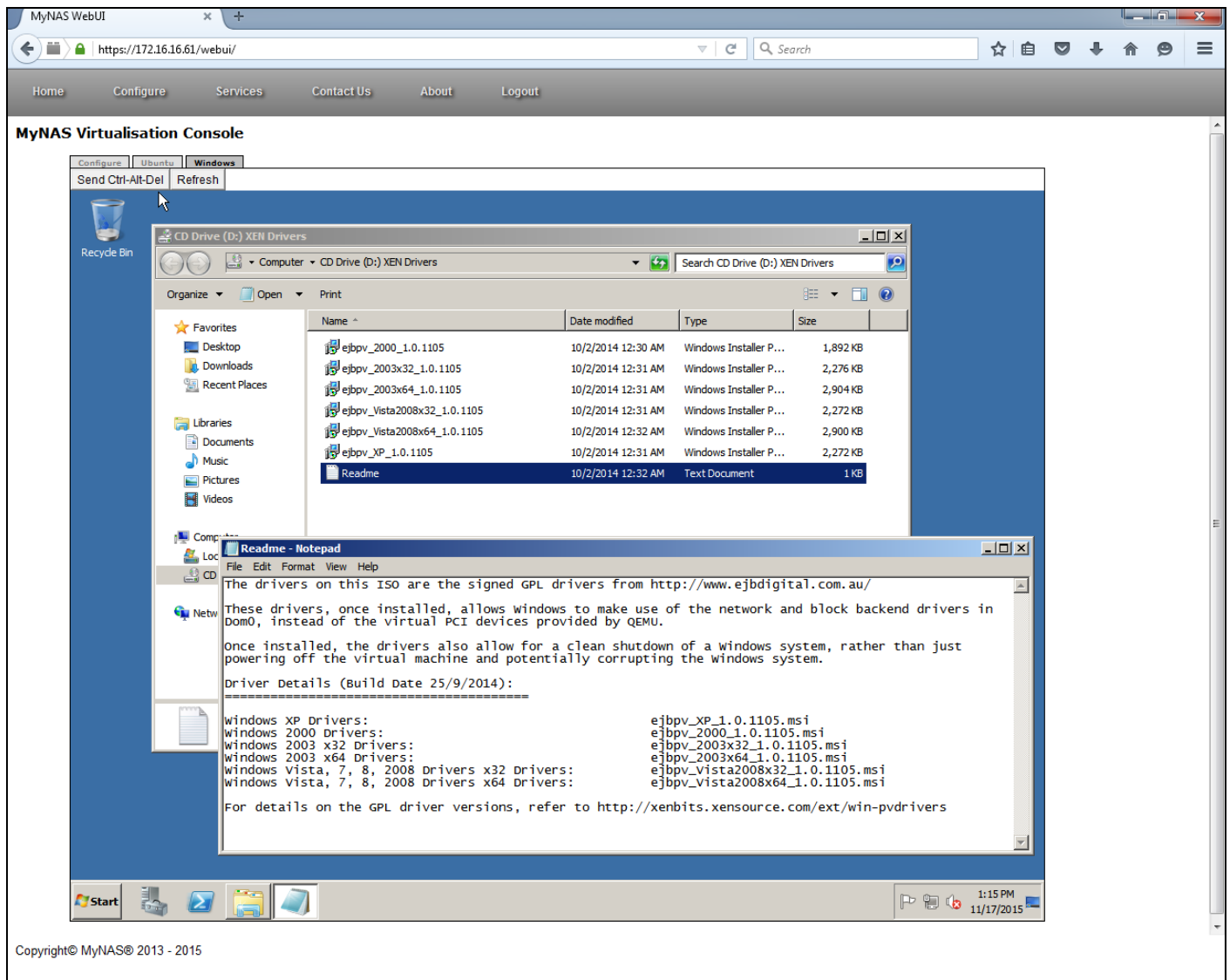


For the Windows virtual machine, select the appropriate action - in this case 'Load Xen Windows Drivers'. Click the 'Modify Virtual Machine' button

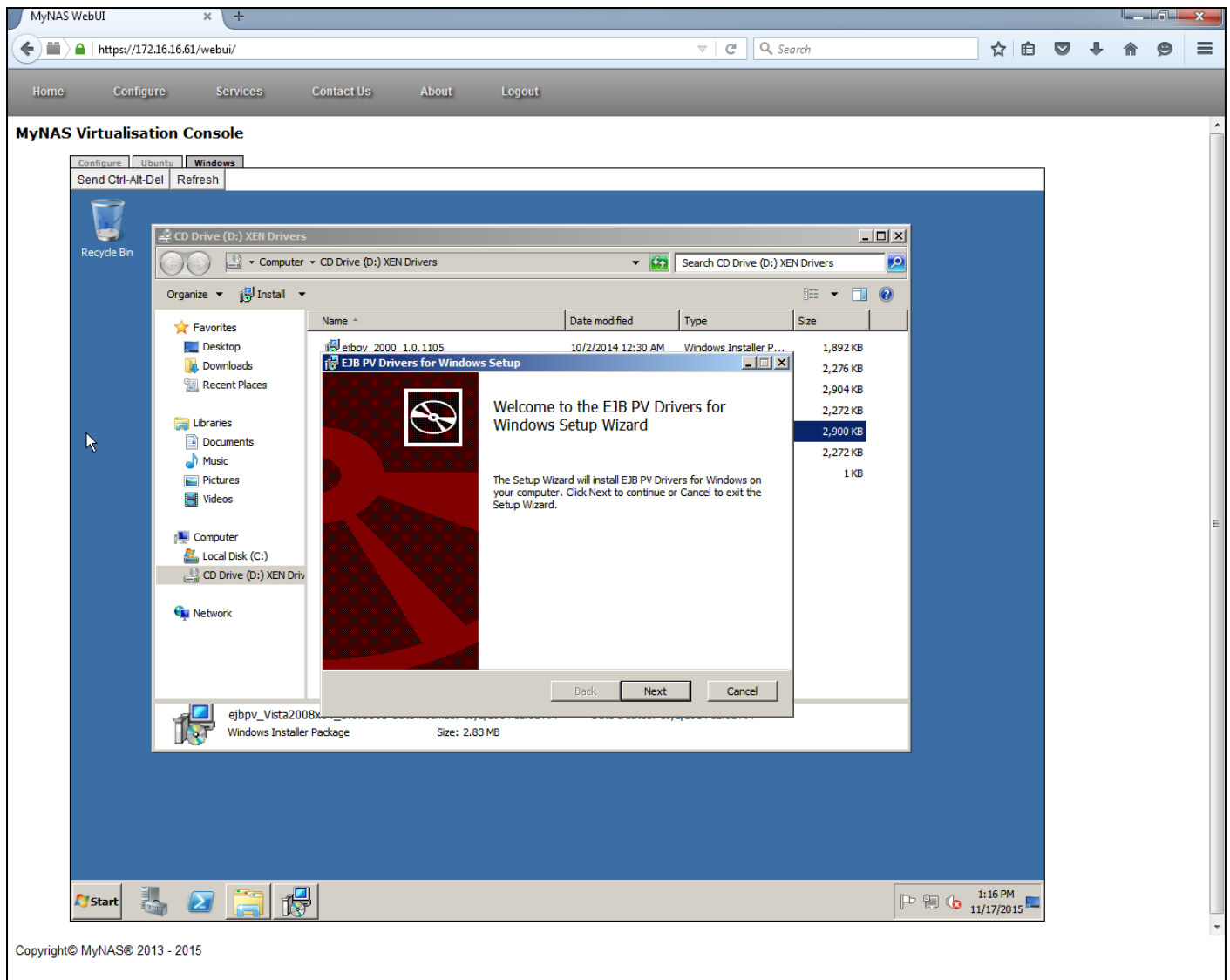
MyNAS will now process the request, and load the drivers into the selected Windows virtual machine



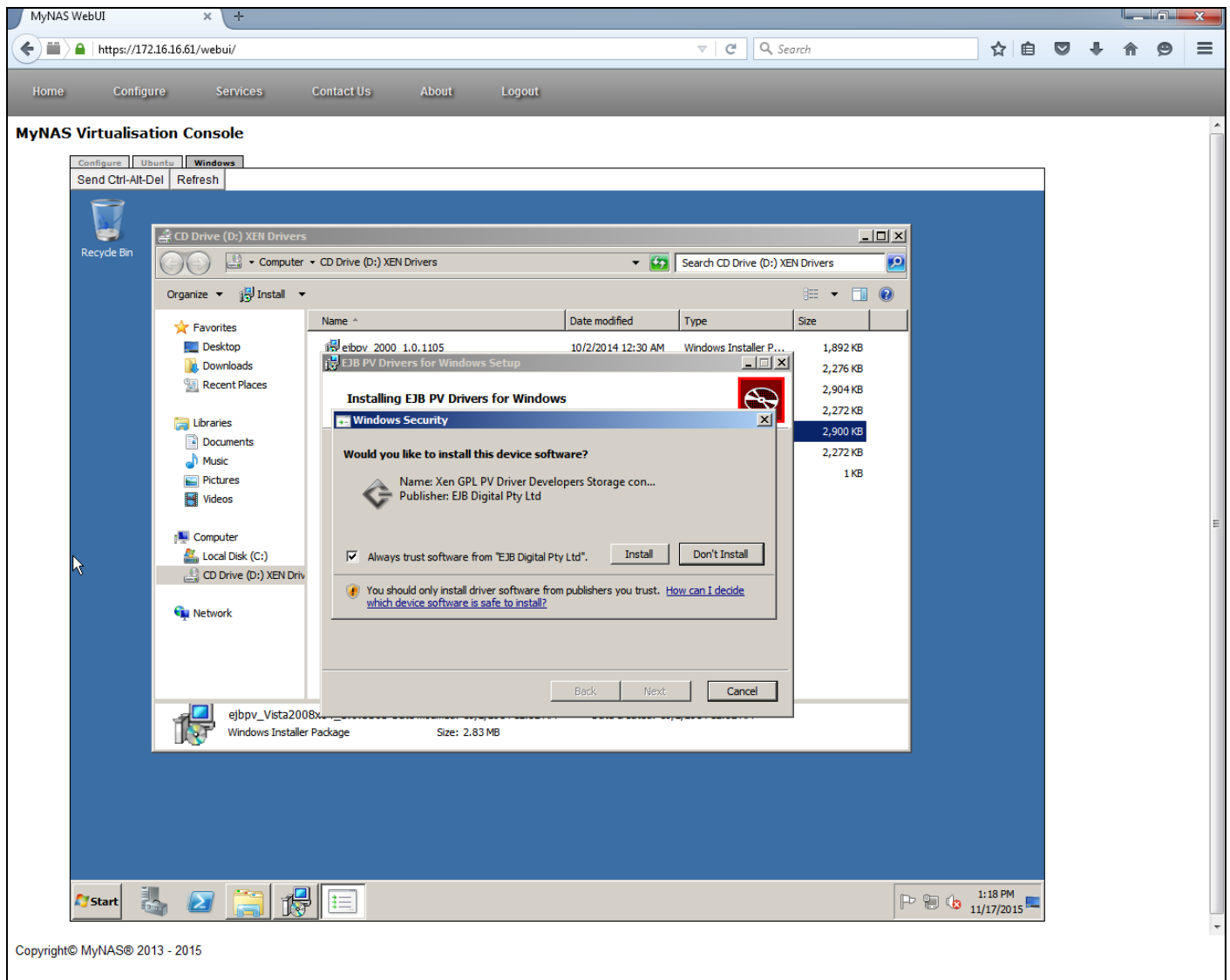
Go back to the selected Windows virtual machine, and the Xen Drivers ISO will be loaded



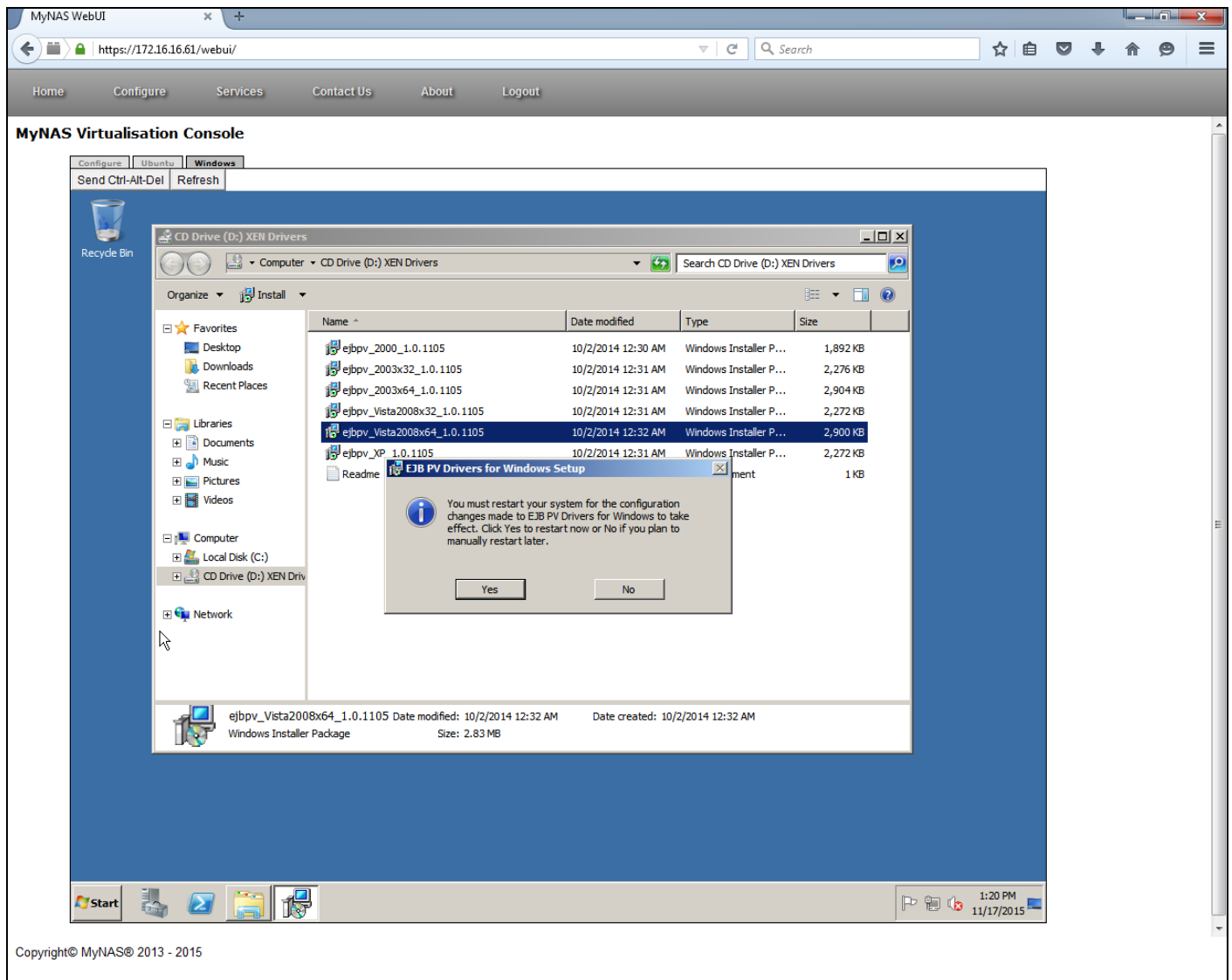
Depending on the version of Windows, load the appropriate driver package



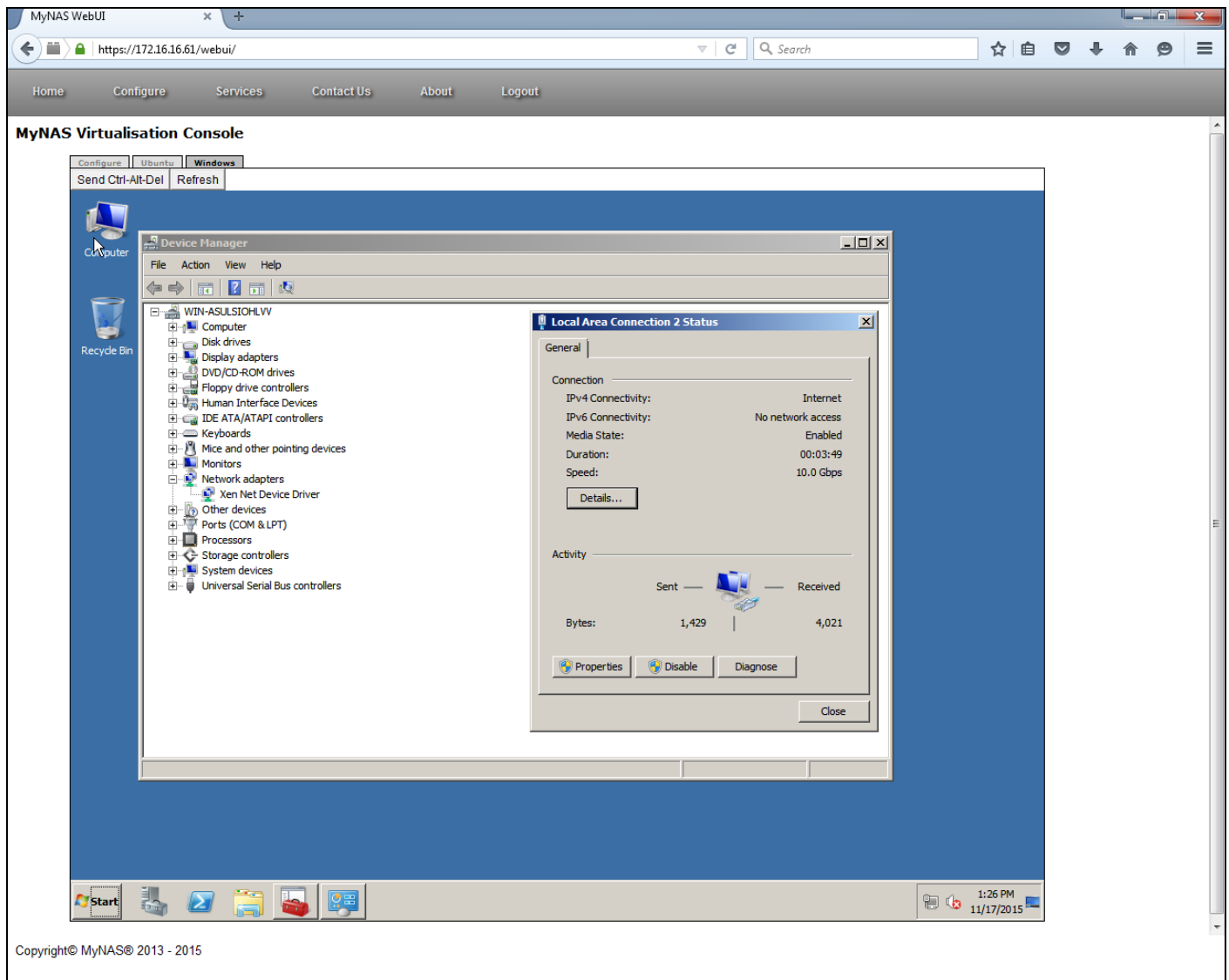
Click through the driver installation, and select to install the 'Complete' program features when prompted.



During the installation, some of the drivers (depending on the operating system) may prompt about the driver not passed the Windows Logo testing, or trusting the driver install from EJB Digital Pty Lt. Continue installing the driver.



Click Finish to complete the Xen Windows Driver installation. You will be prompted to reboot the system to ensure that the new Xen drivers are utilised by the Windows virtual machine.



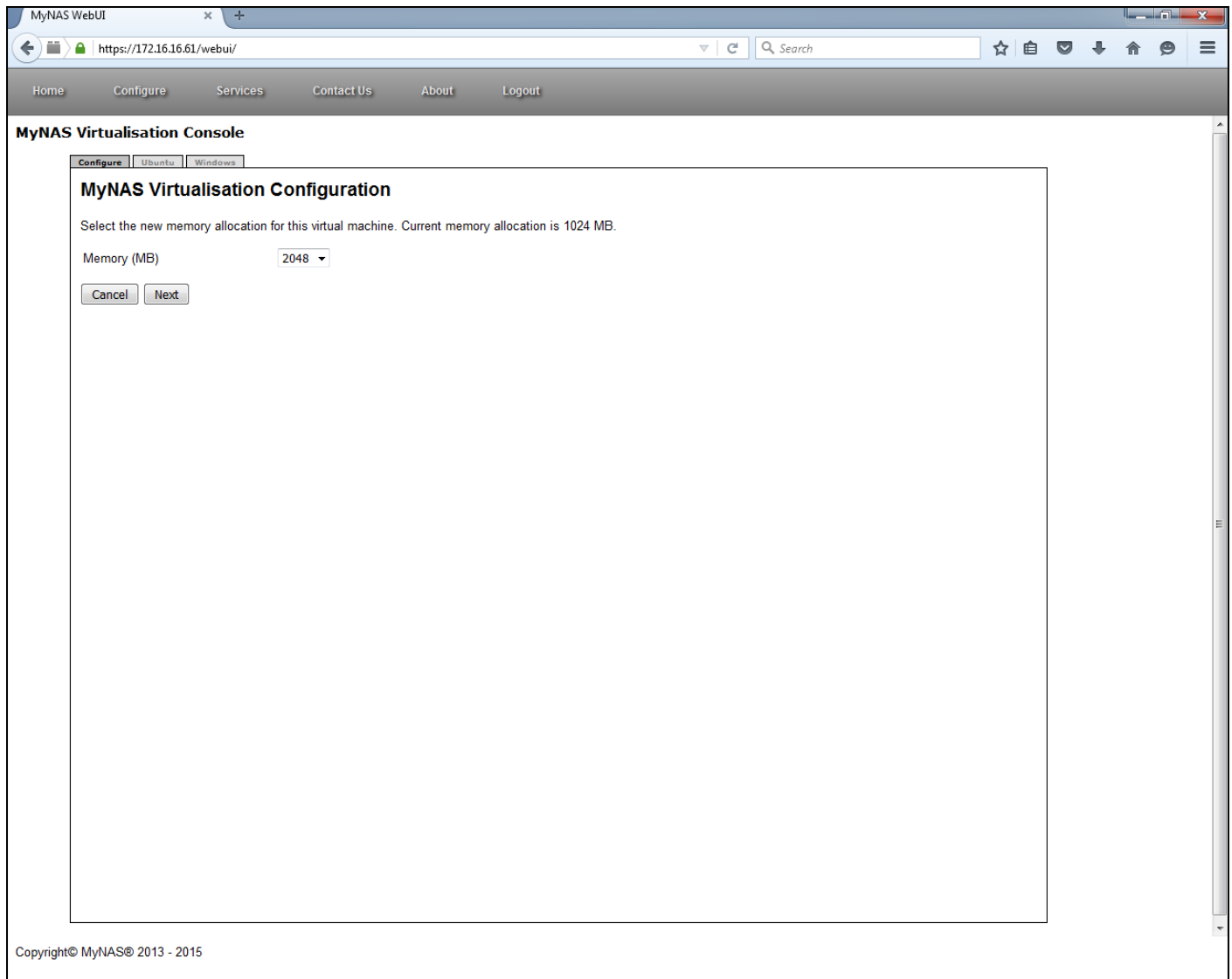
Once the Windows virtual machine is restarted, it will now be using the correct drivers for various system components such as the network card.

Modify a Virtual Machine Hardware

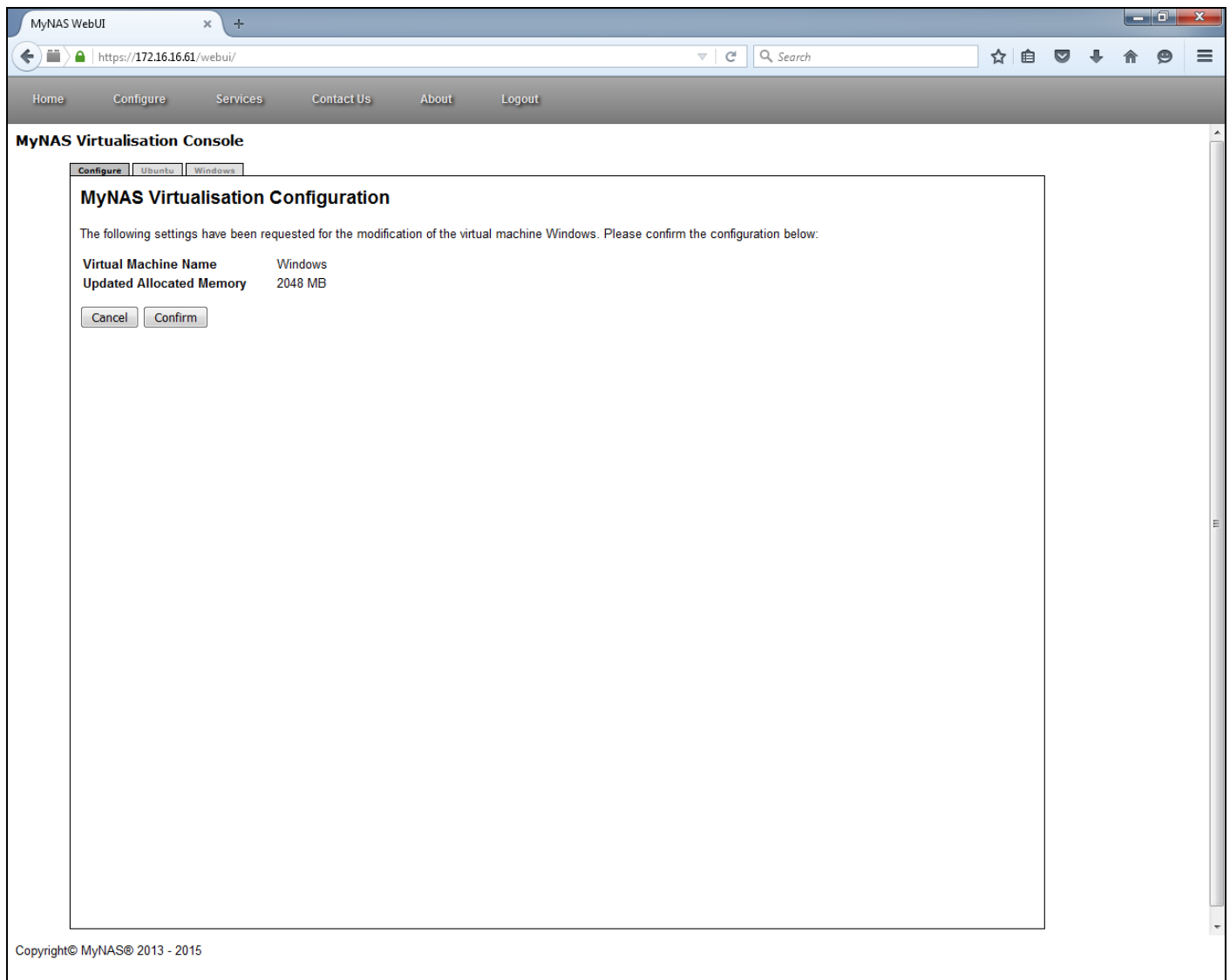
Modifying the virtual machine hardware allows you to increase or decrease the amount of memory assigned to a virtual machine.

Note: Any hardware change to a virtual machine can only be made whilst the virtual machine is powered off.

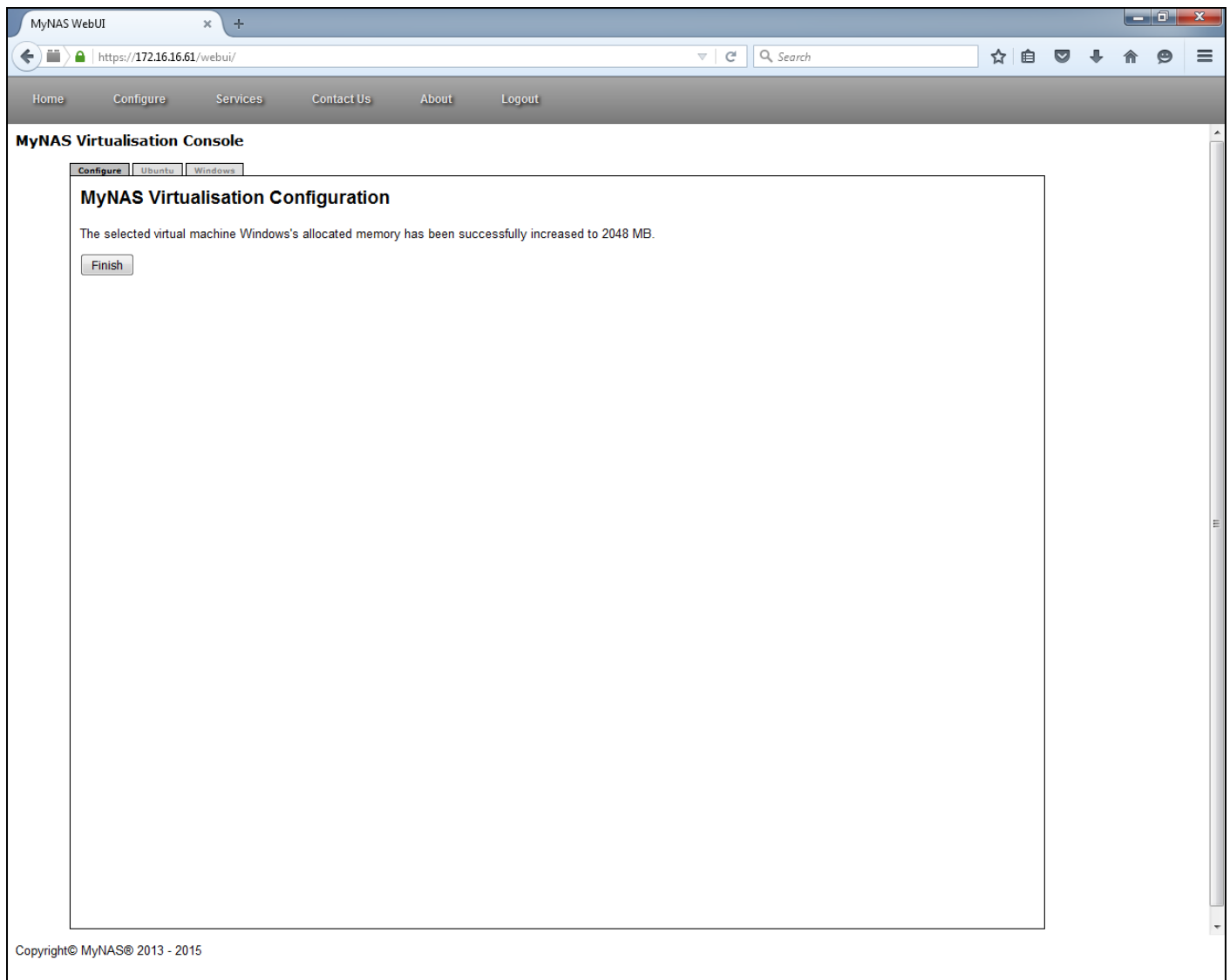
To change the memory allocation, click on the 'Modify Virtual Machine' button, and select the appropriate action for the specific virtual machine - in this case 'Modify Virtual Hardware' and click the Modify Virtual Machine for the respective system.



Select the new memory allocation for the virtual machine, and click 'Next'



Confirm the new memory allocation and click 'Confirm'



MyNAS will now process the memory change for the selected virtual machine. Click Finish to complete the change.

Power on the virtual machine, and validate in the OS the change in system memory:

MyNAS WebUI

https://172.16.16.61/webui/

Home Configure Services Contact Us About Logout

MyNAS Virtualisation Console

Configure | Ubuntu | **Windows**

Send Ctrl-Alt-Del Refresh

System

Control Panel > System and Security > System

Search Control Panel

Control Panel Home

Device Manager
Remote settings
Advanced system settings

View basic information about your computer

Windows edition

Windows Server 2008 R2 Standard
Copyright © 2009 Microsoft Corporation. All rights reserved.

System

Processor:	Intel(R) Xeon(R) CPU E5320 @ 1.86GHz	1.86 GHz
Installed memory (RAM):	2.00 GB	
System type:	64-bit Operating System	
Pen and Touch:	No Pen or Touch Input is available for this Display	

Computer name, domain, and workgroup settings

Computer name:	WIN-ASULSIOHLVV	Change settings
Full computer name:	WIN-ASULSIOHLVV	
Computer description:		
Workgroup:	WORKGROUP	

Windows activation

3 days until automatic activation. [Activate Windows now](#)
Product ID: 00477-001-0000421-84433 [Change product key](#)

See also

[Action Center](#)
[Windows Update](#)

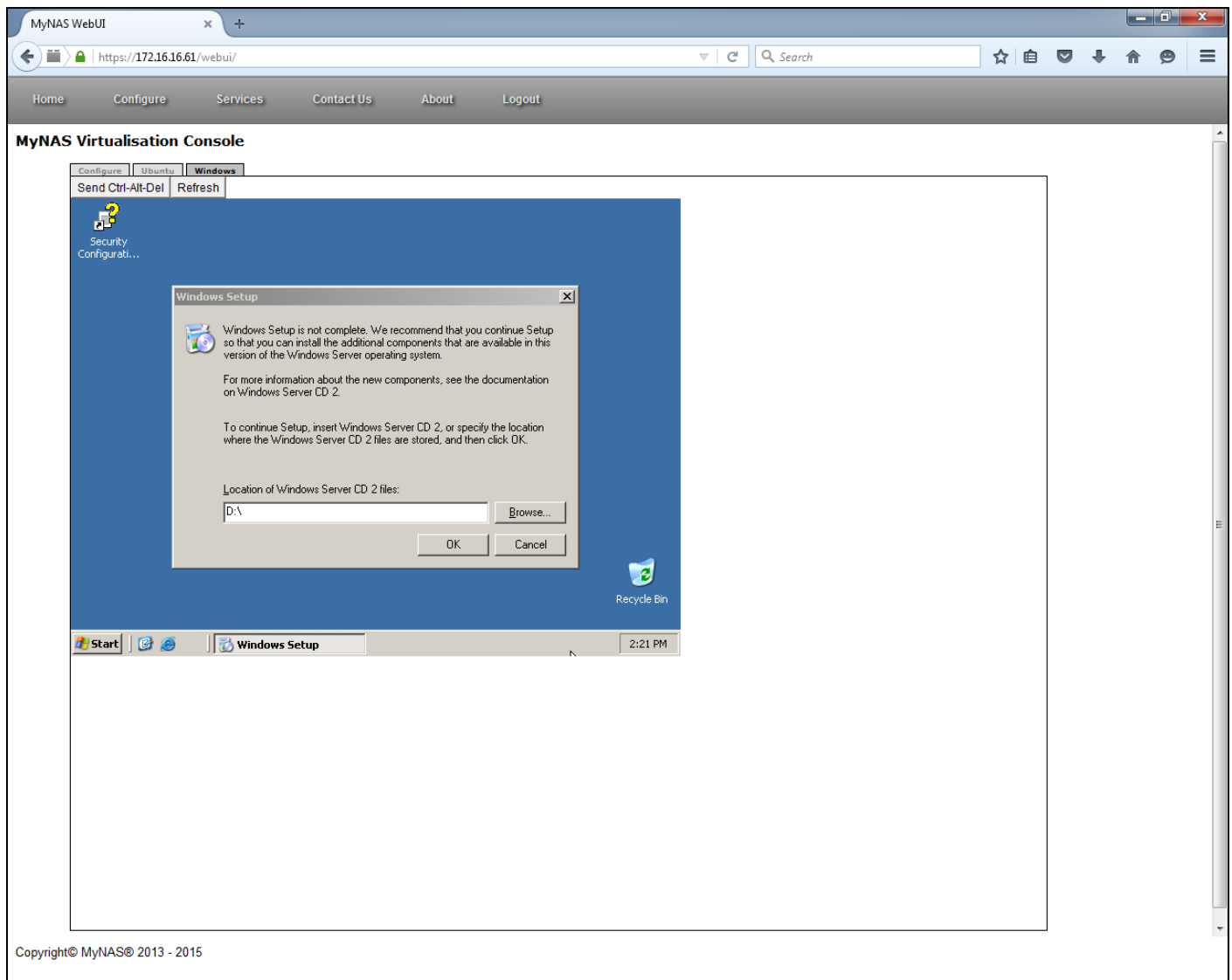
Start

1:35 PM
11/17/2015

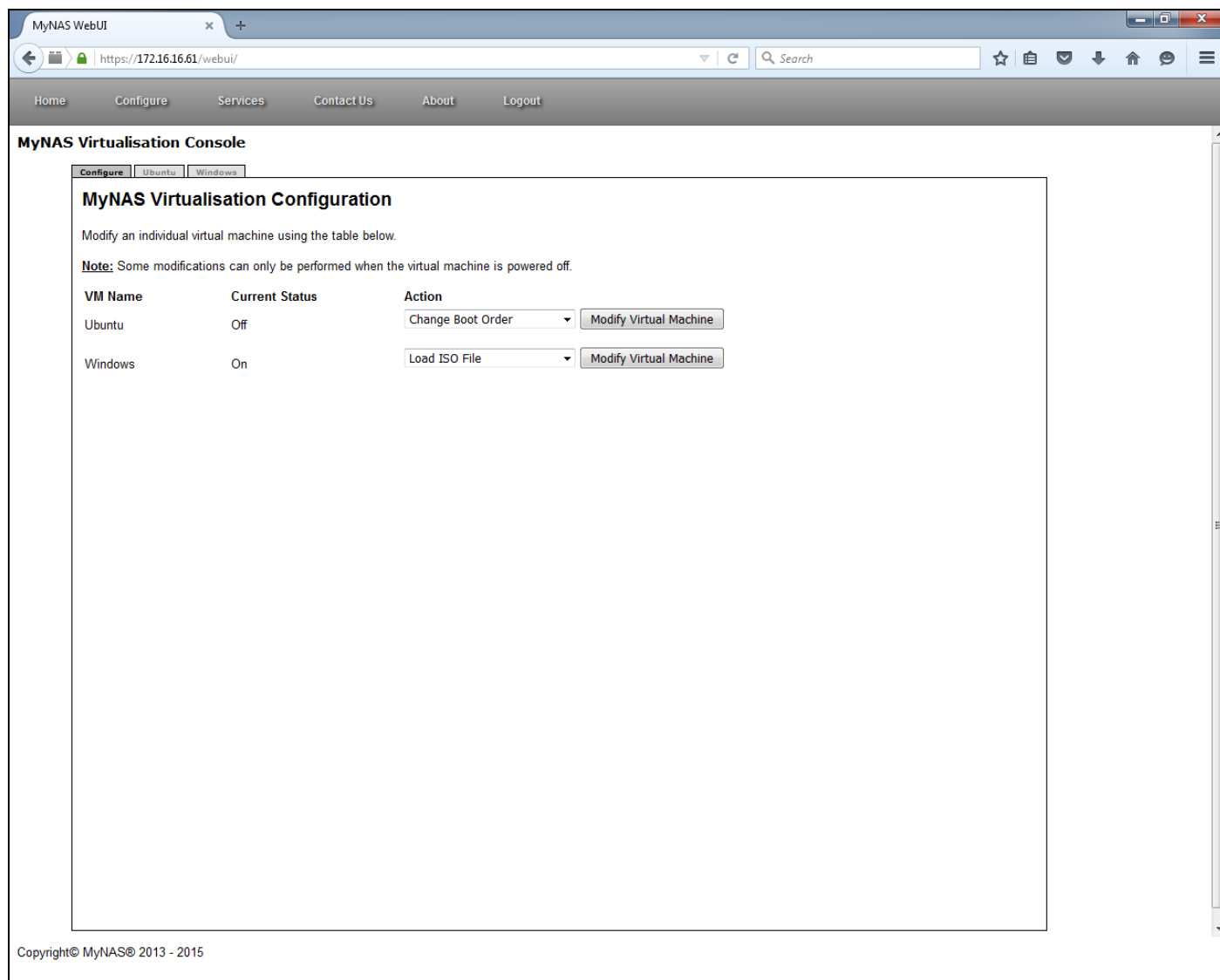
Copyright© MyNAS® 2013 - 2015

Load an additional ISO into the Virtual Machine

Depending on the operating system selected to install, it may be necessary to load an additional ISO file to complete the operating system installation. Most notably, Microsoft Windows 2003 R2 had this requirement as illustrated below:



To load the second ISO to complete the installation, click on the 'Modify Virtual Machine' button, and select the appropriate action for the specific virtual machine - in this case 'Load ISO File'



Click the 'Modify Virtual Machine' button for the Windows Virtual Machine to continue

The screenshot shows a web browser window with the address bar displaying `https://172.16.16.61/webui/`. The browser's address bar includes a search icon and a search input field. The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Virtualisation Console" and contains a sub-section "MyNAS Virtualisation Configuration". This section has three tabs: "Configure", "Ubuntu", and "Windows". The "Configure" tab is active. Below the tabs, there is a text prompt: "Please select the Data Share where the ISO files can be found to load inside this virtual machine:". Under this prompt, there is a label "Data Share:" followed by a dropdown menu. The dropdown menu is open, showing three options: "- Select Data Share -", "- Select Data Share -", and "ISO". Below the dropdown menu are two buttons: "Cancel" and "Next". At the bottom left of the page, there is a copyright notice: "Copyright© MyNAS® 2013 - 2015".

MyNAS WebUI

Home Configure Services Contact Us About Logout

MyNAS Virtualisation Console

Configure | Ubuntu | Windows

MyNAS Virtualisation Configuration

Please select the Data Share where the ISO files can be found to load inside this virtual machine:

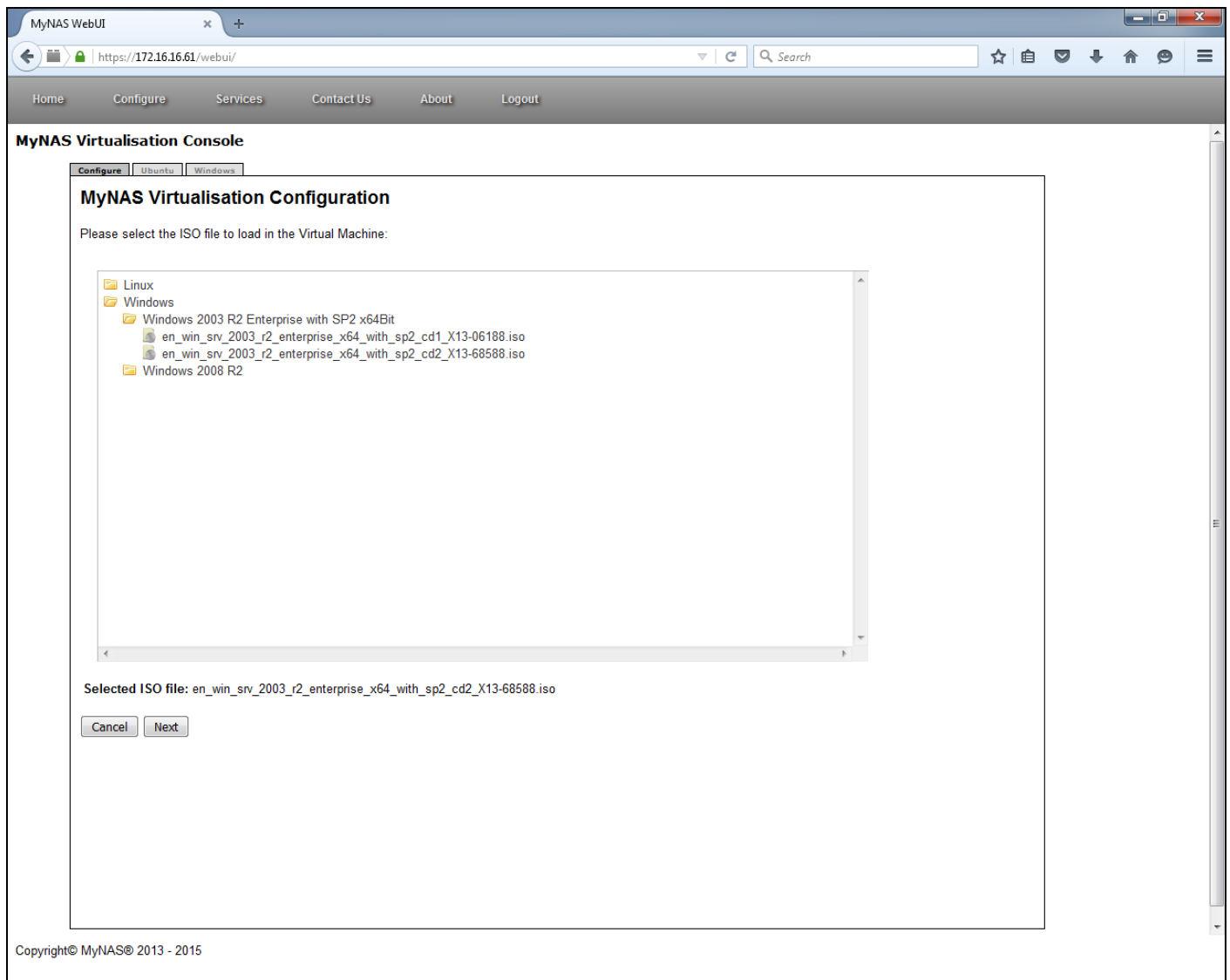
Data Share: - Select Data Share -

Cancel Next

- Select Data Share -
- Select Data Share -
ISO

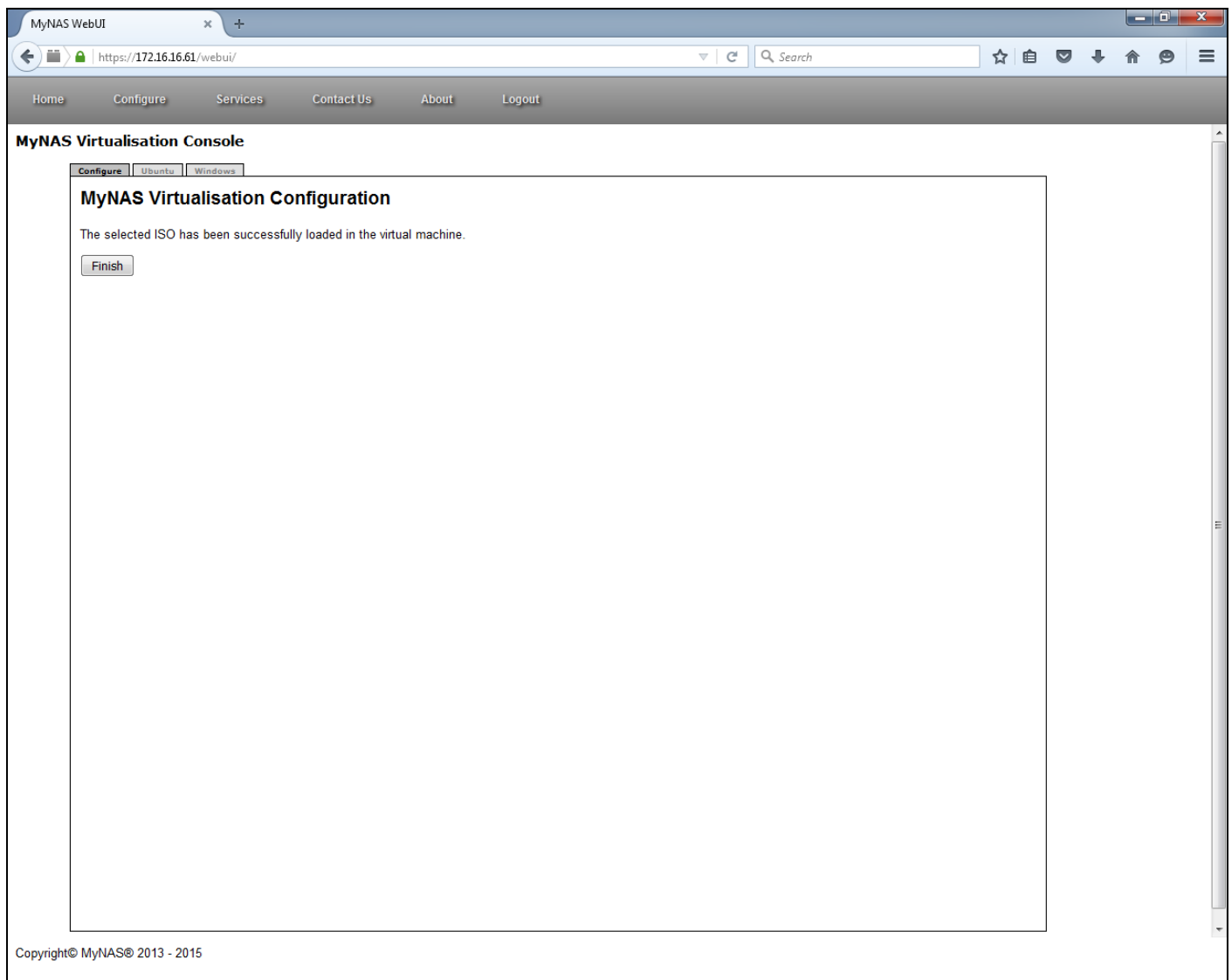
Copyright© MyNAS® 2013 - 2015

Select the appropriate Data Share for the ISO file, and click 'Next'

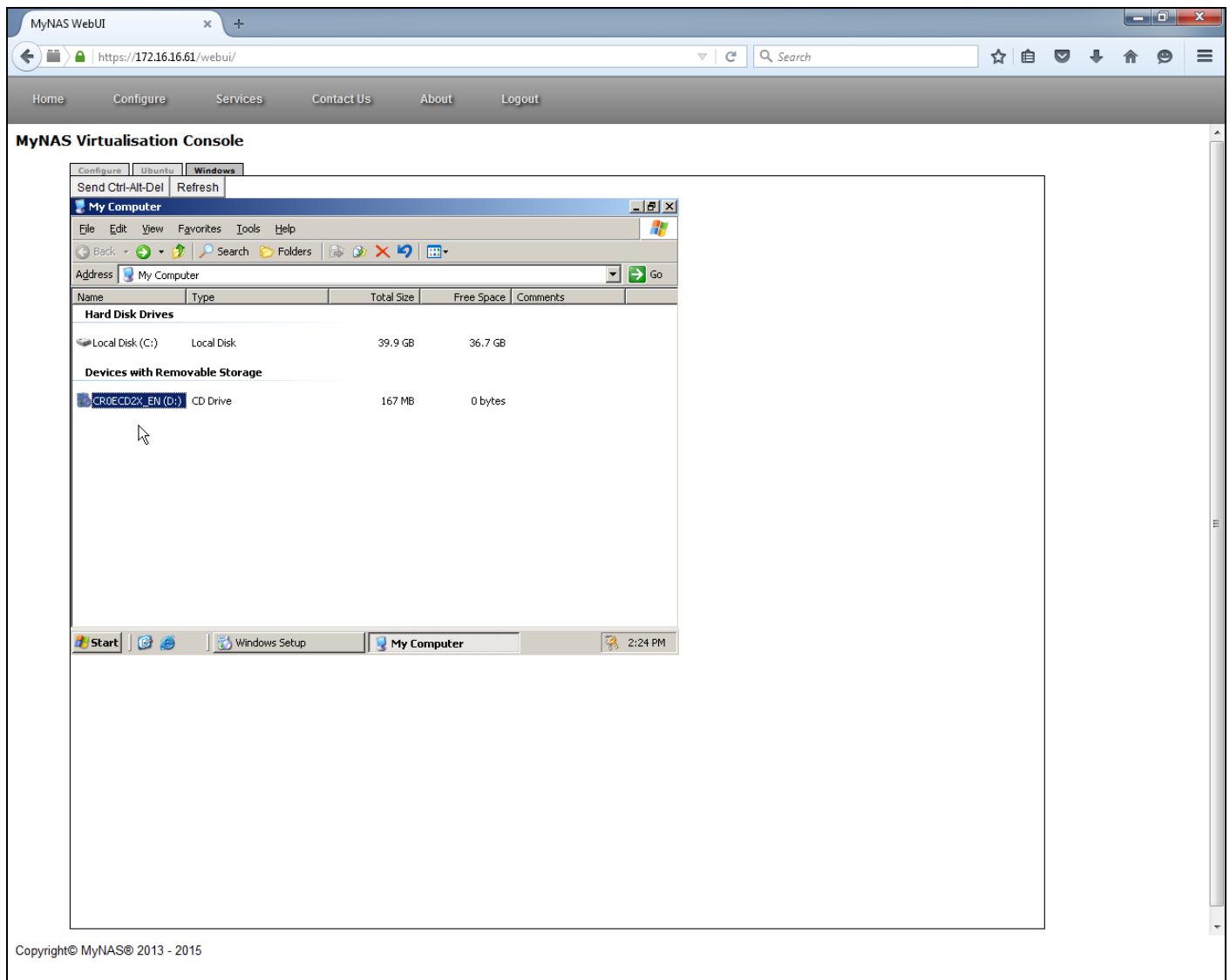


Double click the appropriate ISO file - in this case 'cd2' for the 2003 R2 installation. Click 'Next' to continue.

The selected ISO file will now be loaded into the virtual machine.



Click Finish, and go back to the virtual machine by clicking on the virtual machine tab to verify that the new ISO has loaded

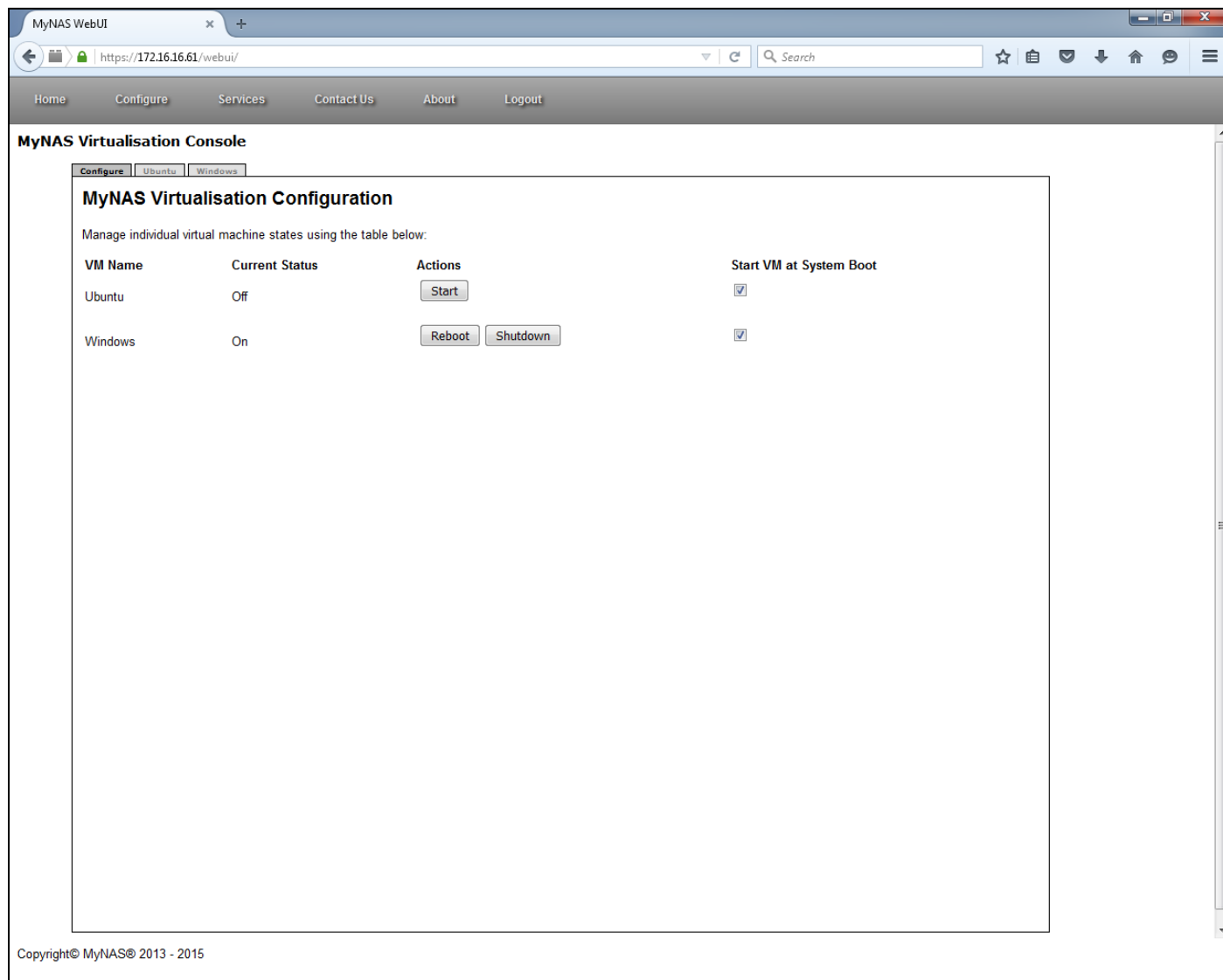


Continue the installation of the operating system as required.



Manage Virtual Machine status

Managing a virtual machine status allows the machine to be started, rebooted or shutdown. It also allows to specify whether to start that particular virtual machine at boot time.



The screenshot displays the MyNAS WebUI interface. At the top, there is a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. Below this, the main content area is titled "MyNAS Virtualisation Console". Underneath, there are tabs for "Configure", "Ubuntu", and "Windows". The "Configure" tab is active, showing a section titled "MyNAS Virtualisation Configuration". This section contains the instruction: "Manage individual virtual machine states using the table below:". Below this instruction is a table with four columns: "VM Name", "Current Status", "Actions", and "Start VM at System Boot".

VM Name	Current Status	Actions	Start VM at System Boot
Ubuntu	Off	<button>Start</button>	<input checked="" type="checkbox"/>
Windows	On	<button>Reboot</button> <button>Shutdown</button>	<input checked="" type="checkbox"/>

At the bottom left of the page, there is a copyright notice: "Copyright© MyNAS® 2013 - 2015".

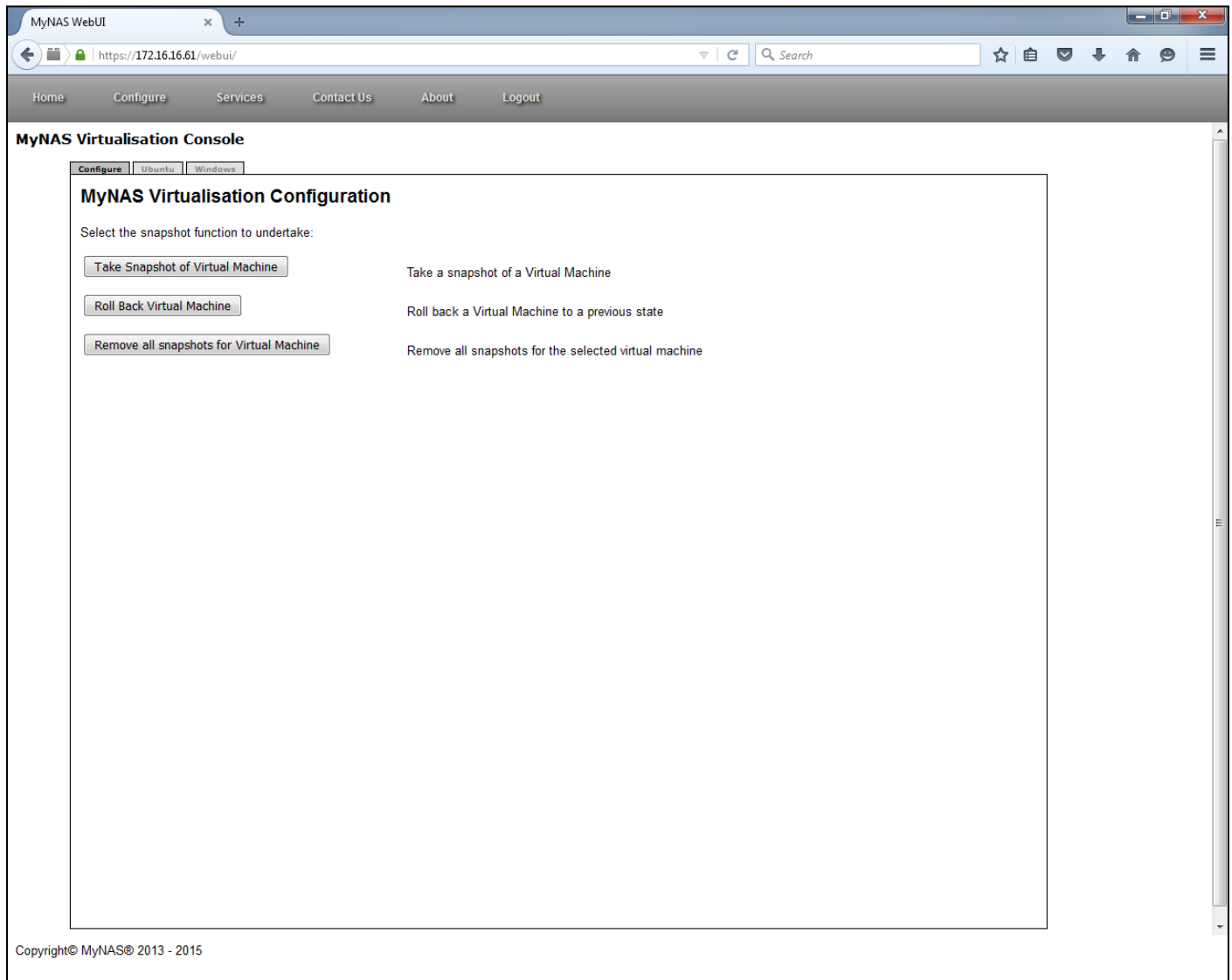
To change the status of a virtual machine, click on the respective button or check box to action the request.

Snapshot a Virtual Machine

Snapshotting a virtual machine allows you to roll back to a specific point in time for that specific virtual machine.

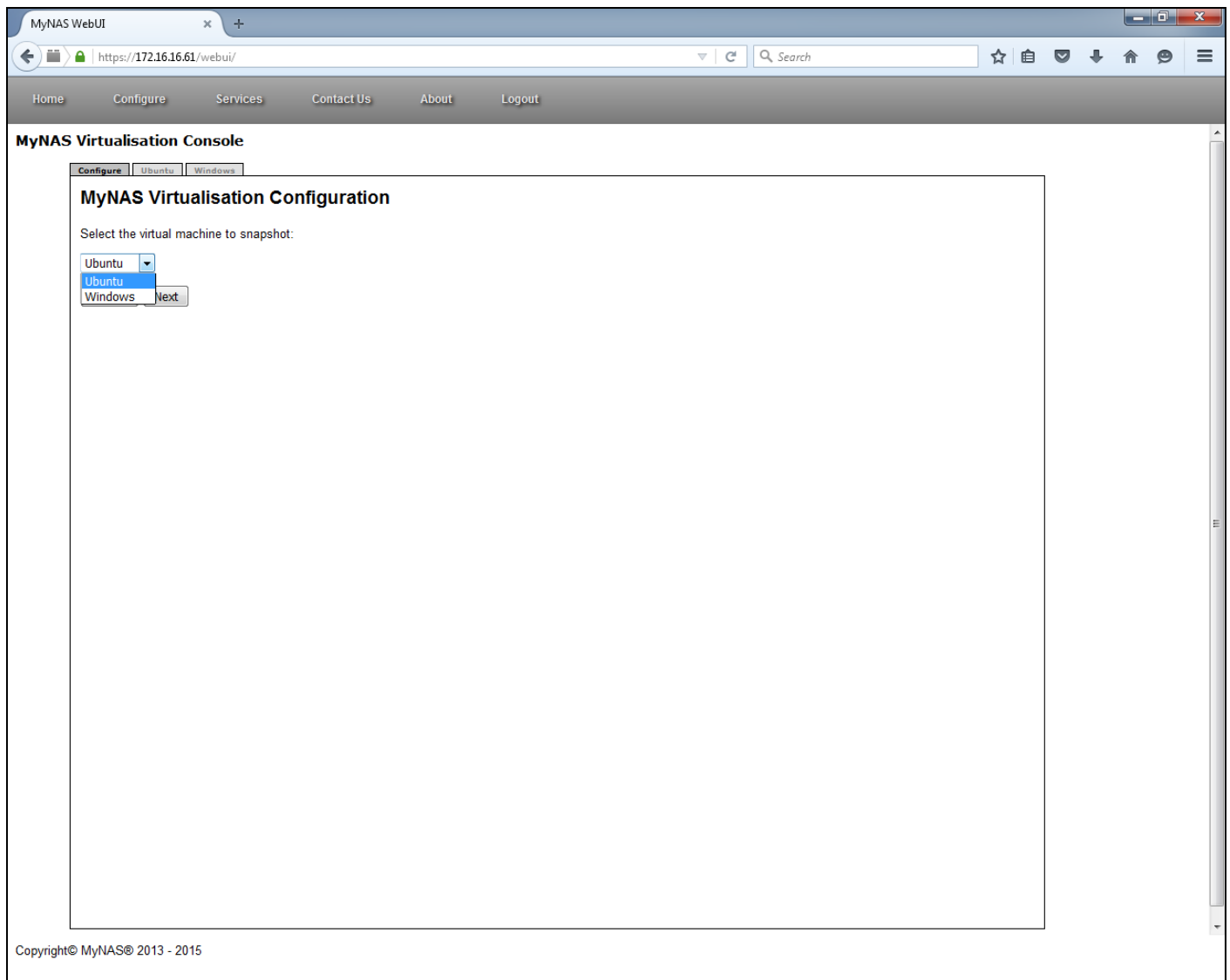
Note: To snapshot a virtual machine, it must first be in a shutdown state.

To snapshot a virtual machine, click on the 'Manage Snapshot' button for the following options

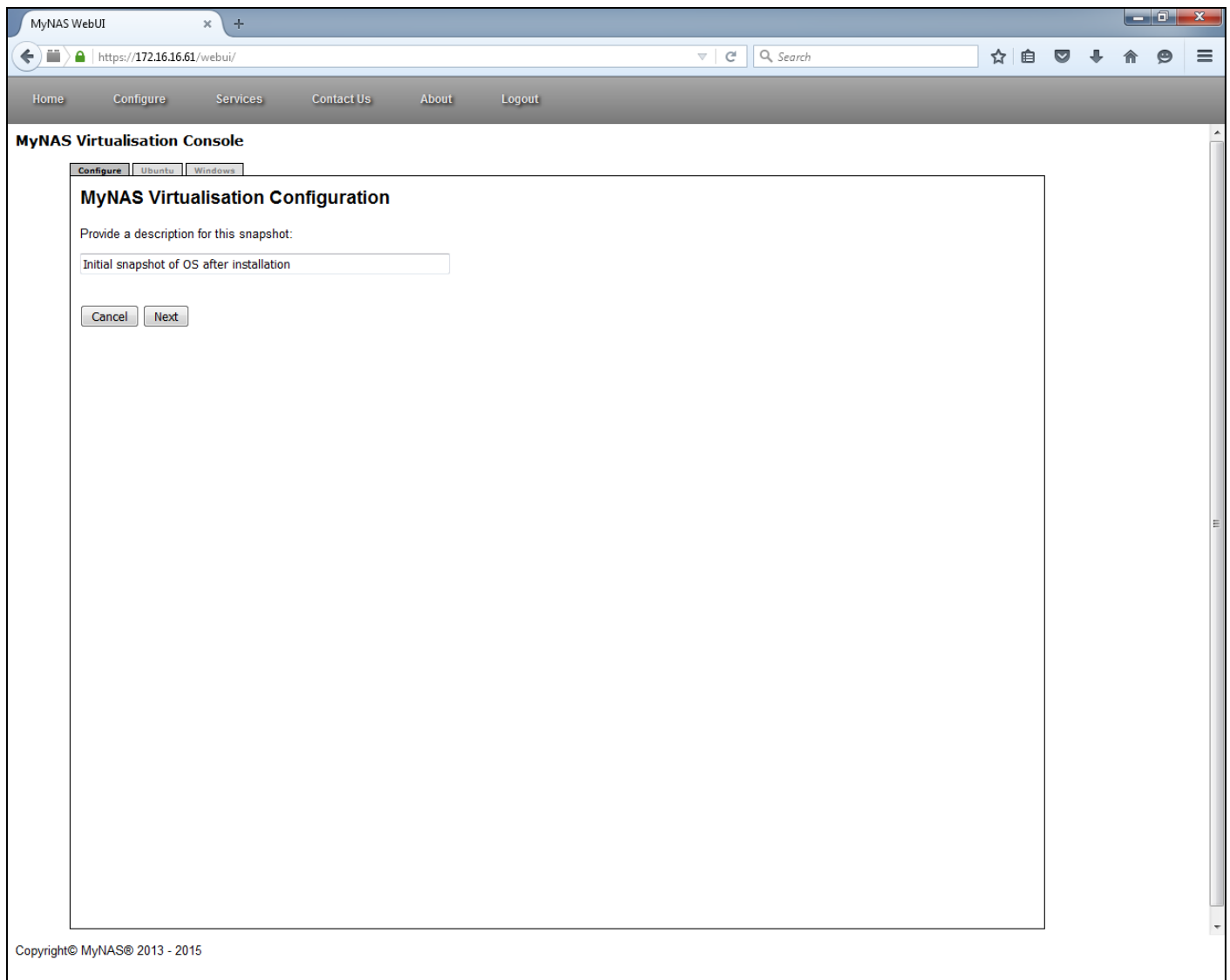


Take a snapshot

To take a snapshot, click on the 'Take Snapshot of Virtual Machine' button.



Select the respective virtual machine, and click 'Next'



The screenshot shows a web browser window with the address bar displaying `https://172.16.16.61/webui/`. The browser's address bar includes a search icon and a search input field. The page has a navigation bar with links: Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS Virtualisation Console" and contains a sub-section "MyNAS Virtualisation Configuration". This section has three tabs: "Configure", "Ubuntu", and "Windows". The "Configure" tab is active. It prompts the user to "Provide a description for this snapshot:" and shows a text input field containing "Initial snapshot of OS after installation". Below the input field are two buttons: "Cancel" and "Next".

MyNAS Virtualisation Console

Configure | Ubuntu | Windows

MyNAS Virtualisation Configuration

Provide a description for this snapshot:

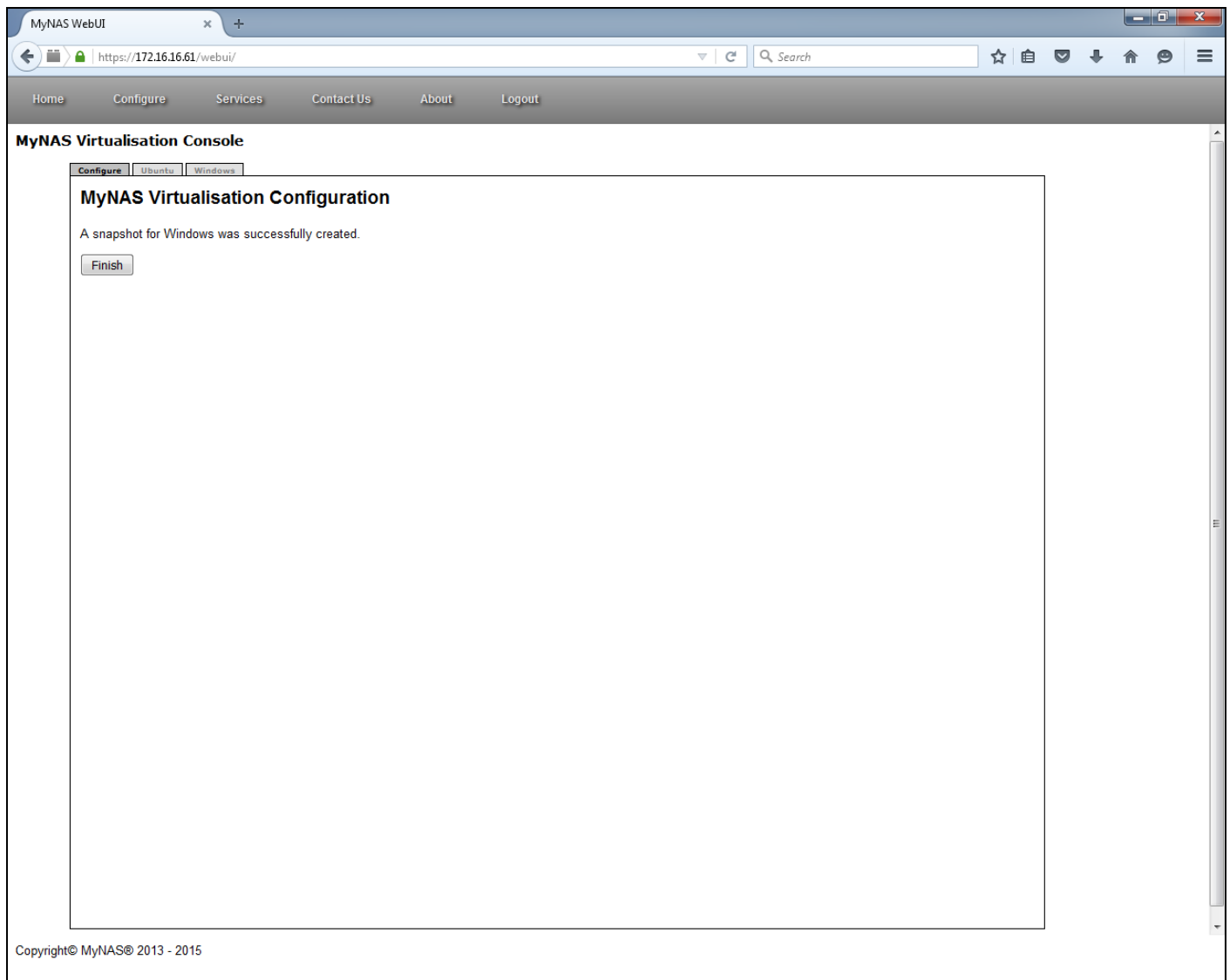
Initial snapshot of OS after installation

Cancel Next

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Give the snapshot an appropriate description. Click 'Next'

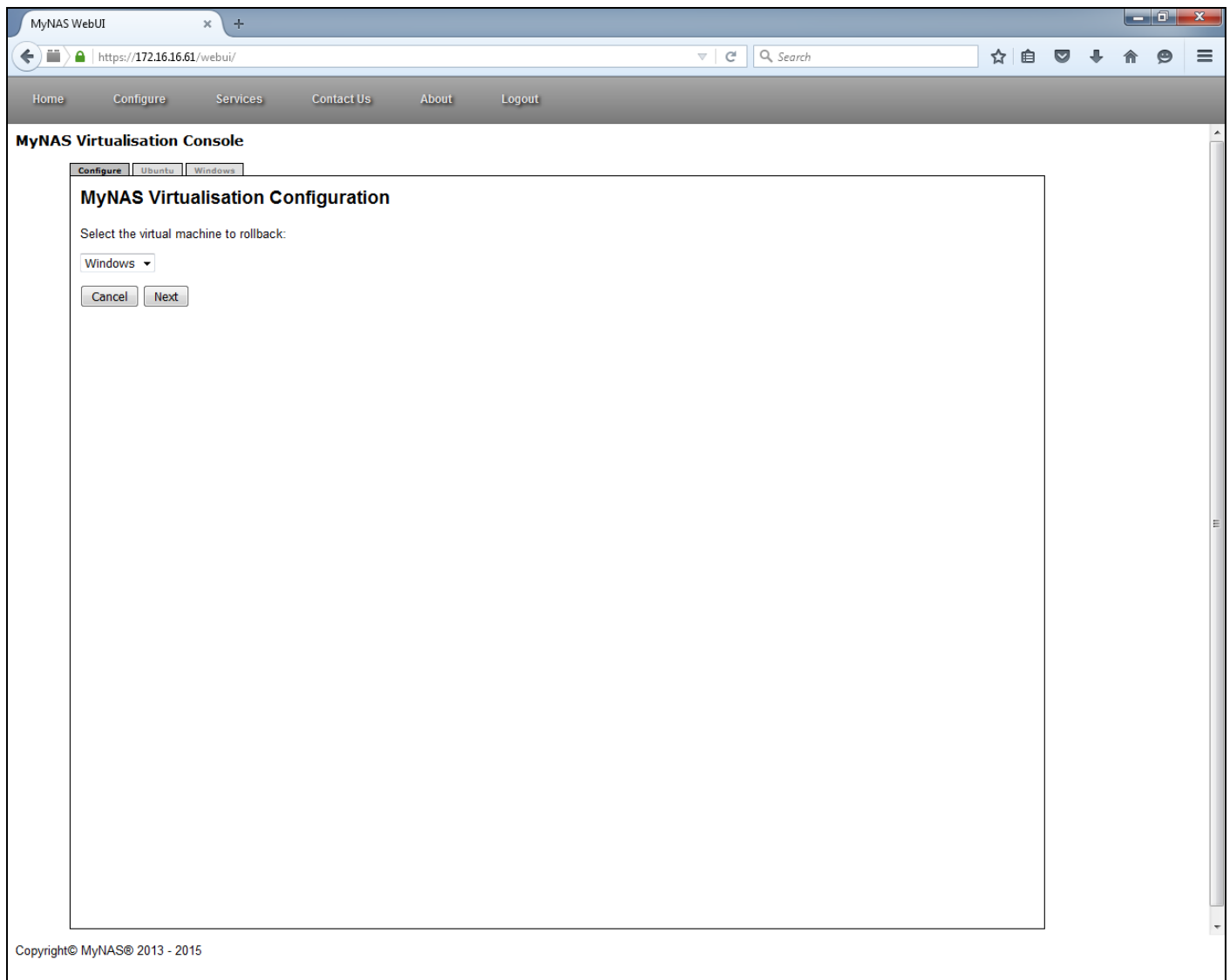
A snapshot will now be created for the virtual machine



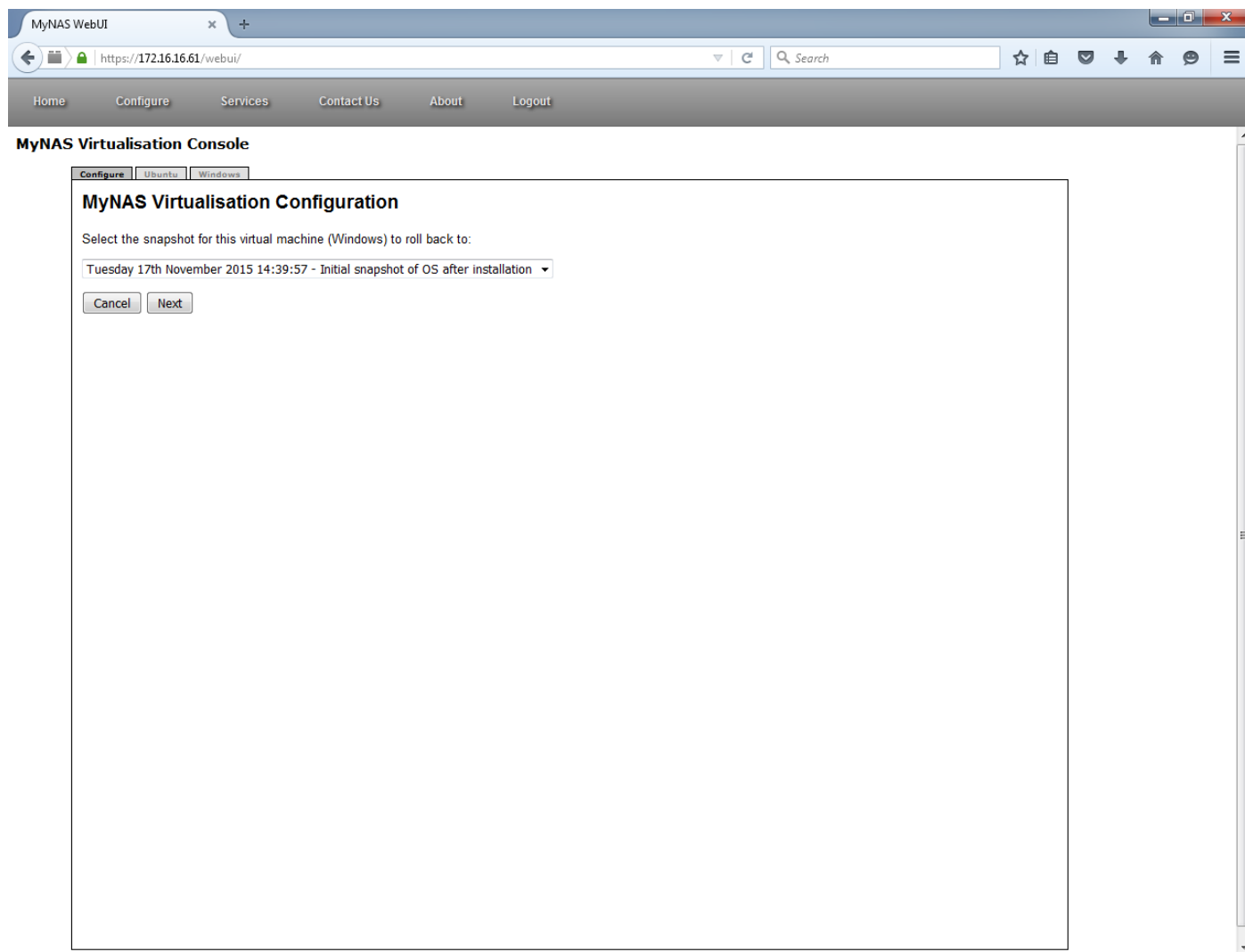
Click finish to complete the process. Power on the virtual machine if required

Roll back to a specific snapshot

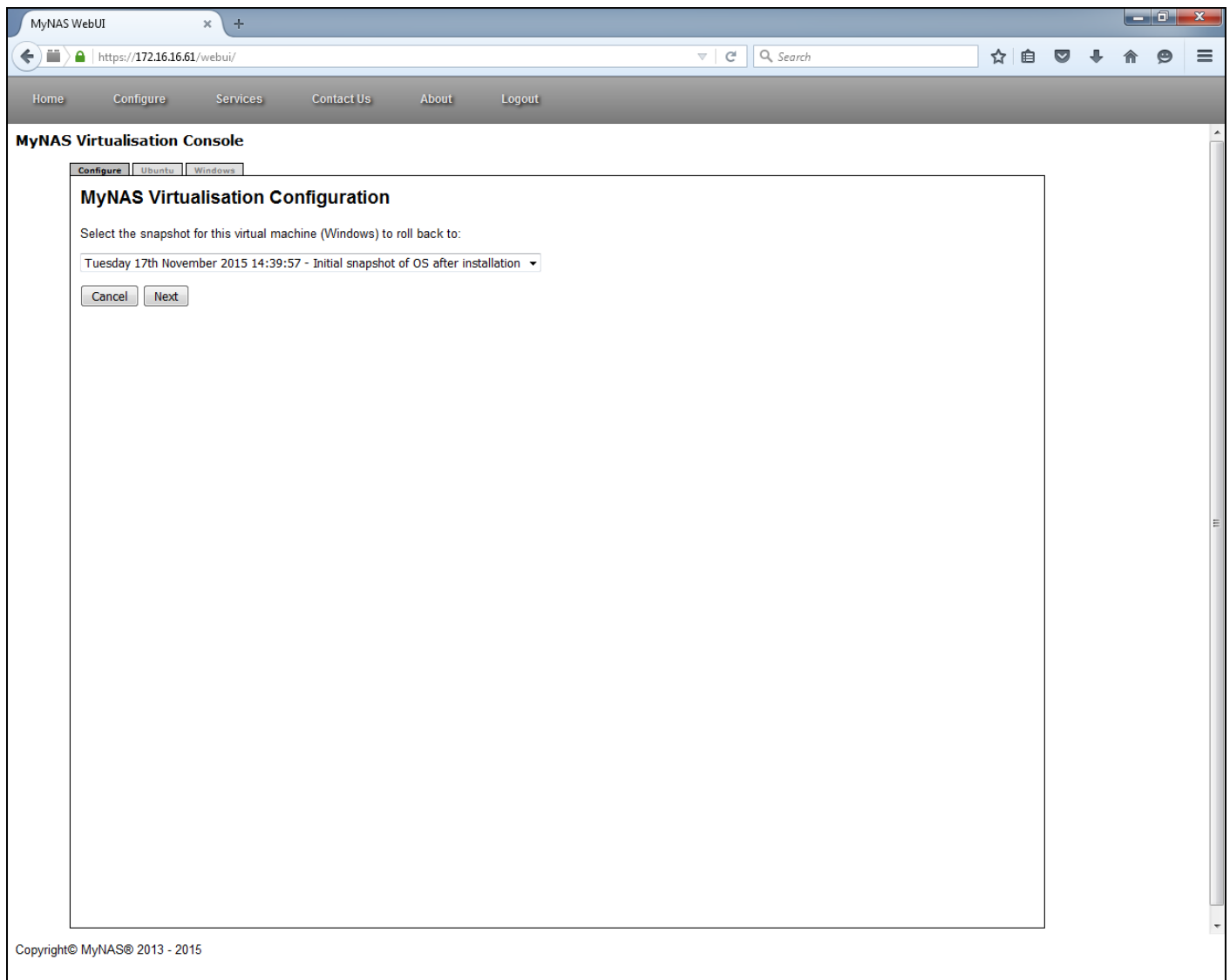
To roll back to a snapshot, click on the 'Roll Back Virtual Machine' button



Select the appropriate virtual machine to roll back, and click 'Next'.



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Select the appropriate snapshot to roll back to.

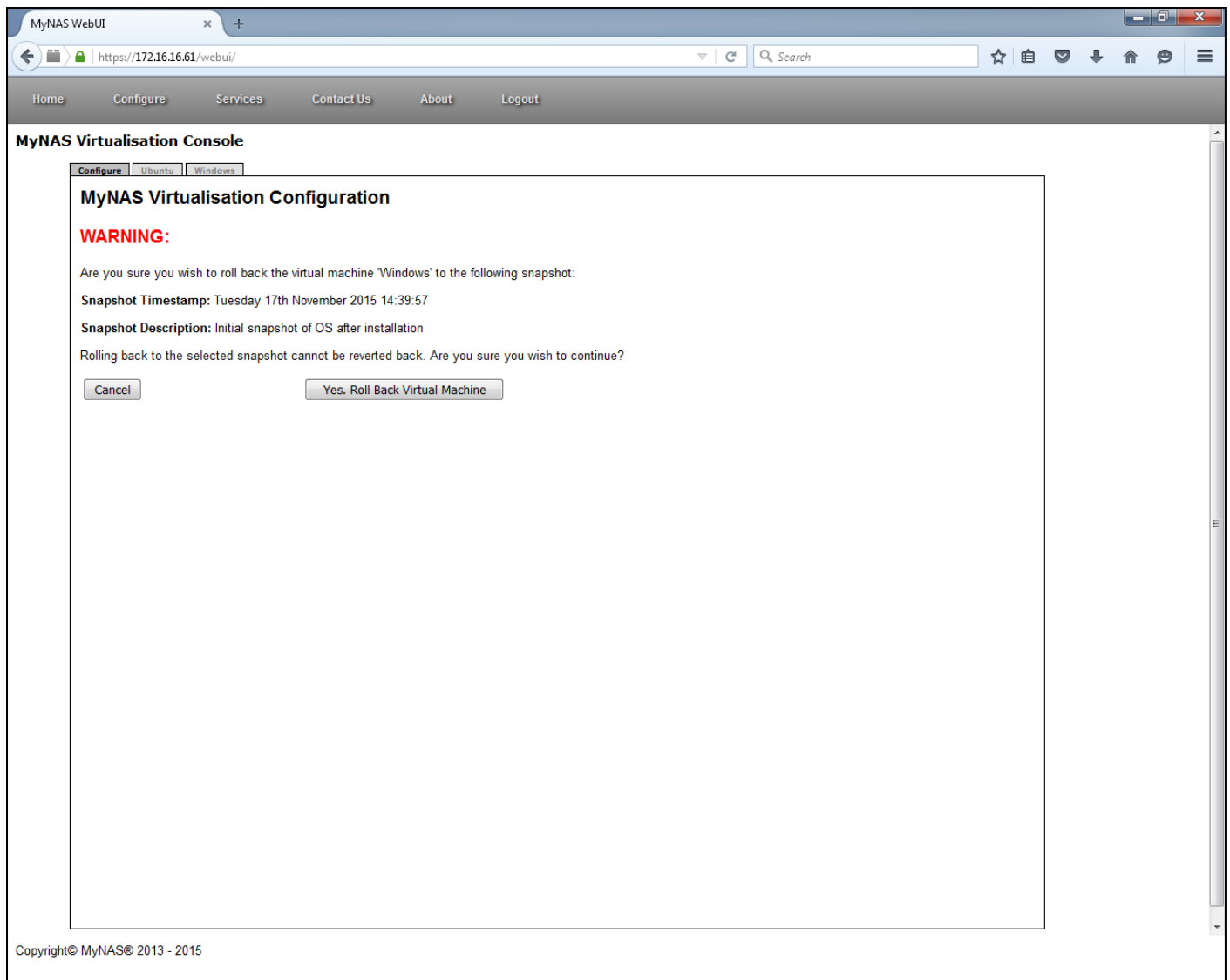
Using the MyNAS CLI, we can also see that the snapshot available for rollback is only currently using 121MB of changed data.

```
login: enable
Password:
Last login: Tue Nov 17 14:42:44 from 127.0.0.1

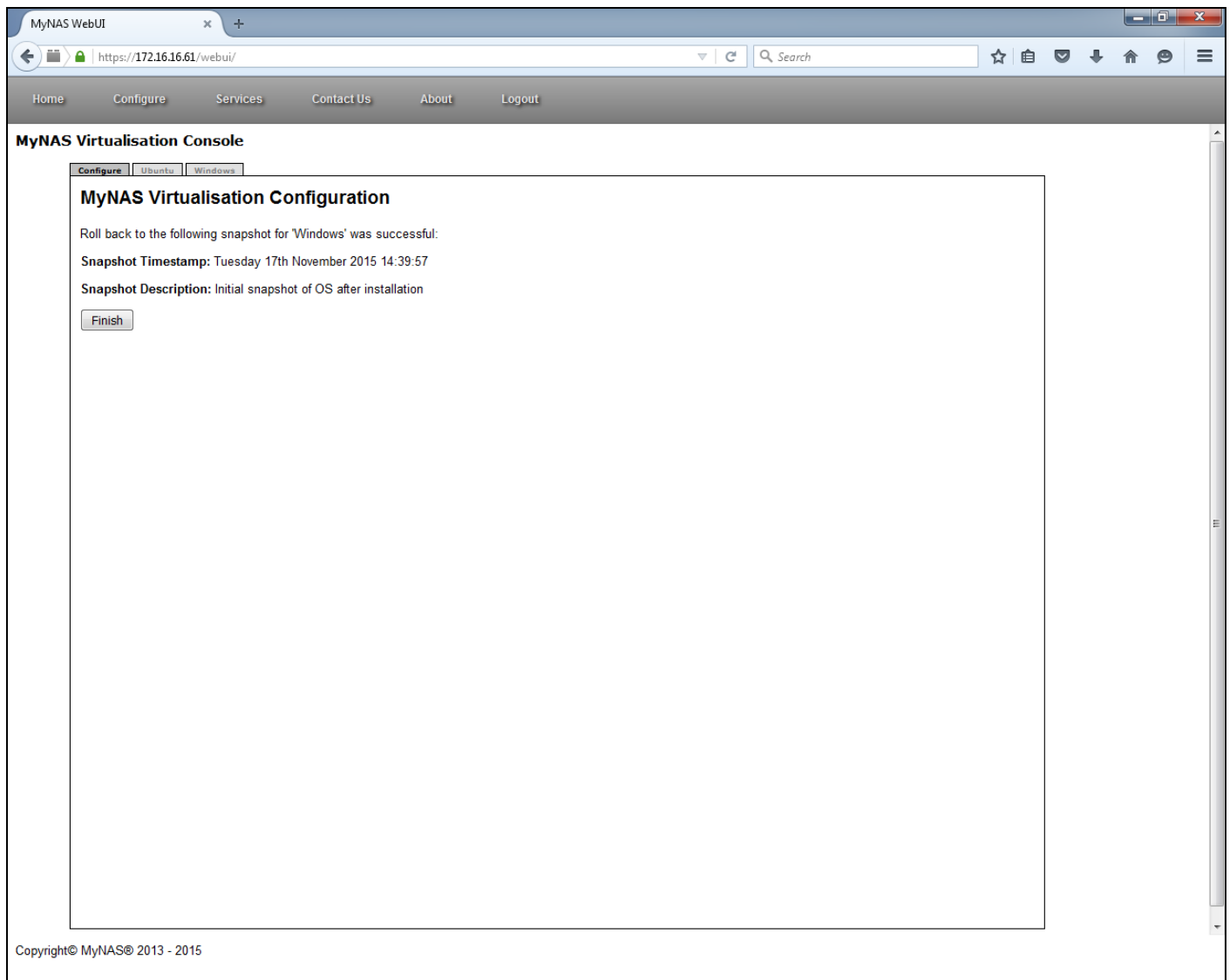
Entering MyNAS CLI privileged execution mode...

enable# show zfs snapshots
NAME                                USED  AVAIL  REFER  MOUNTPOINT
storage0/xen/Windows/disk_sda@2015-11-17-143957 48.5M -    2.28G -
enable#
```

Click 'Next' in the WebUI to roll back to the selected snapshot.



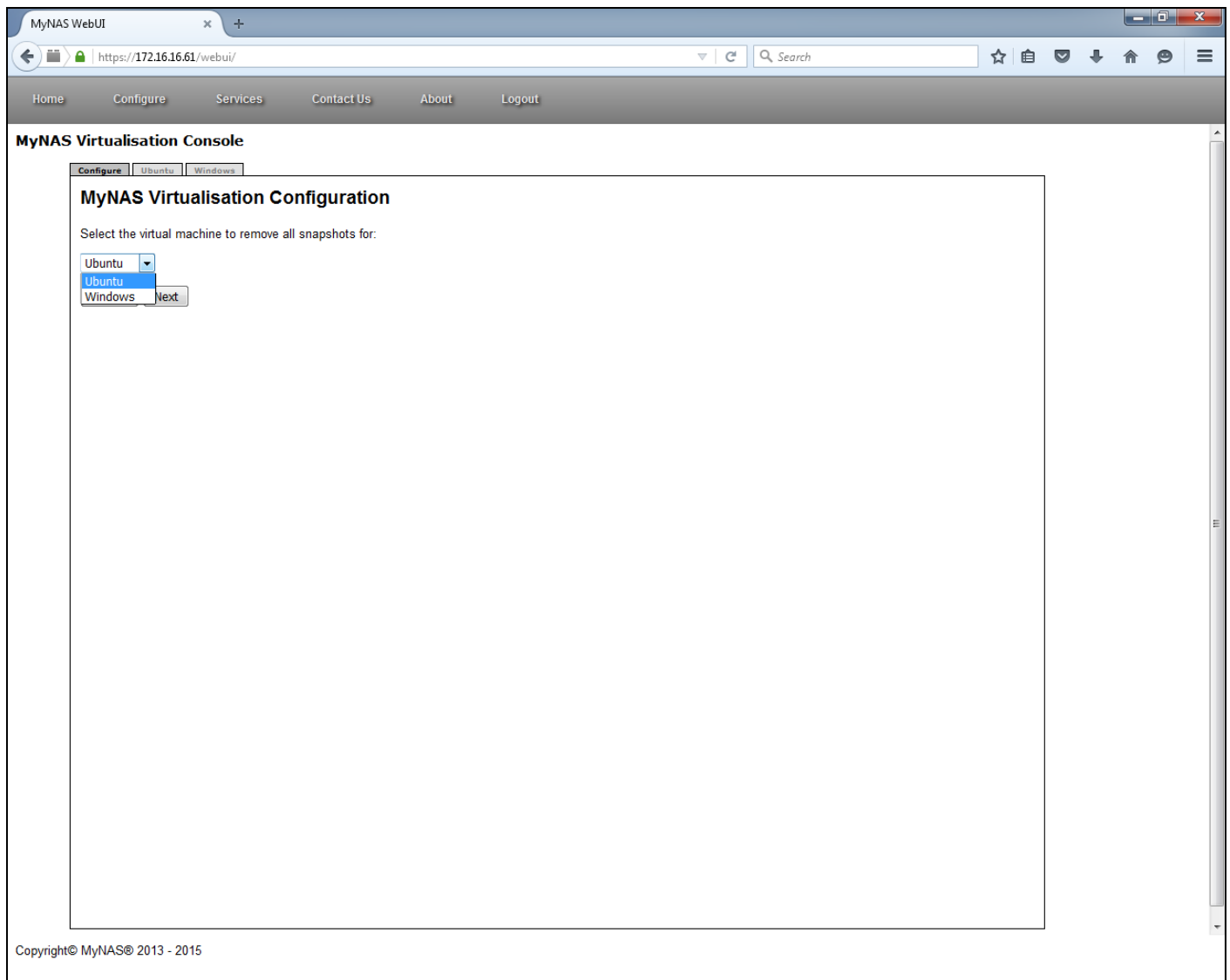
A confirmation to rollback will be presented in-case an incorrect selection was performed. If the selection is OK, click 'Yes. Roll Back Virtual Machine'



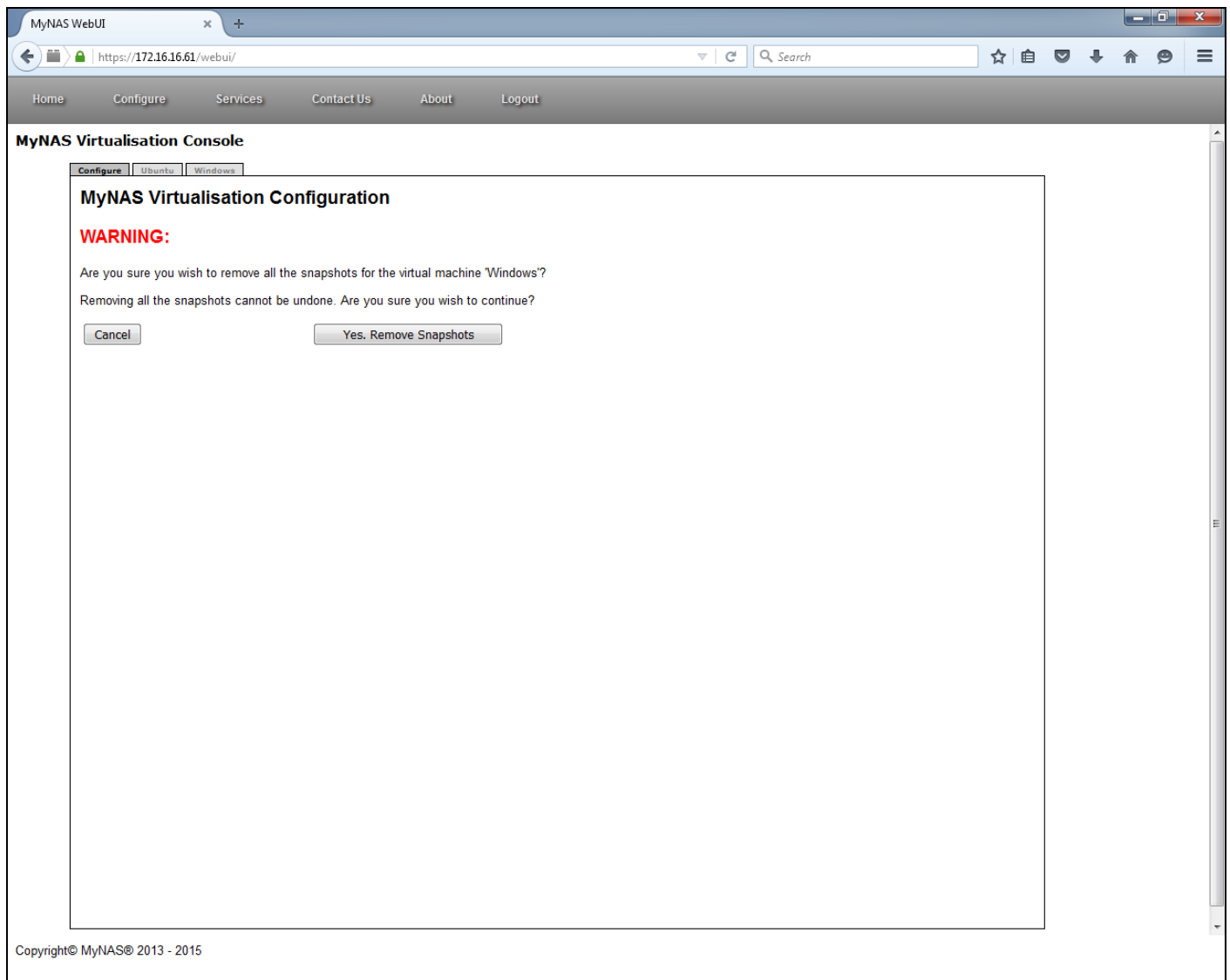
The selected virtual machine will be rolled back to the selected snapshot. Click finish to complete the process.

Remove all snapshots

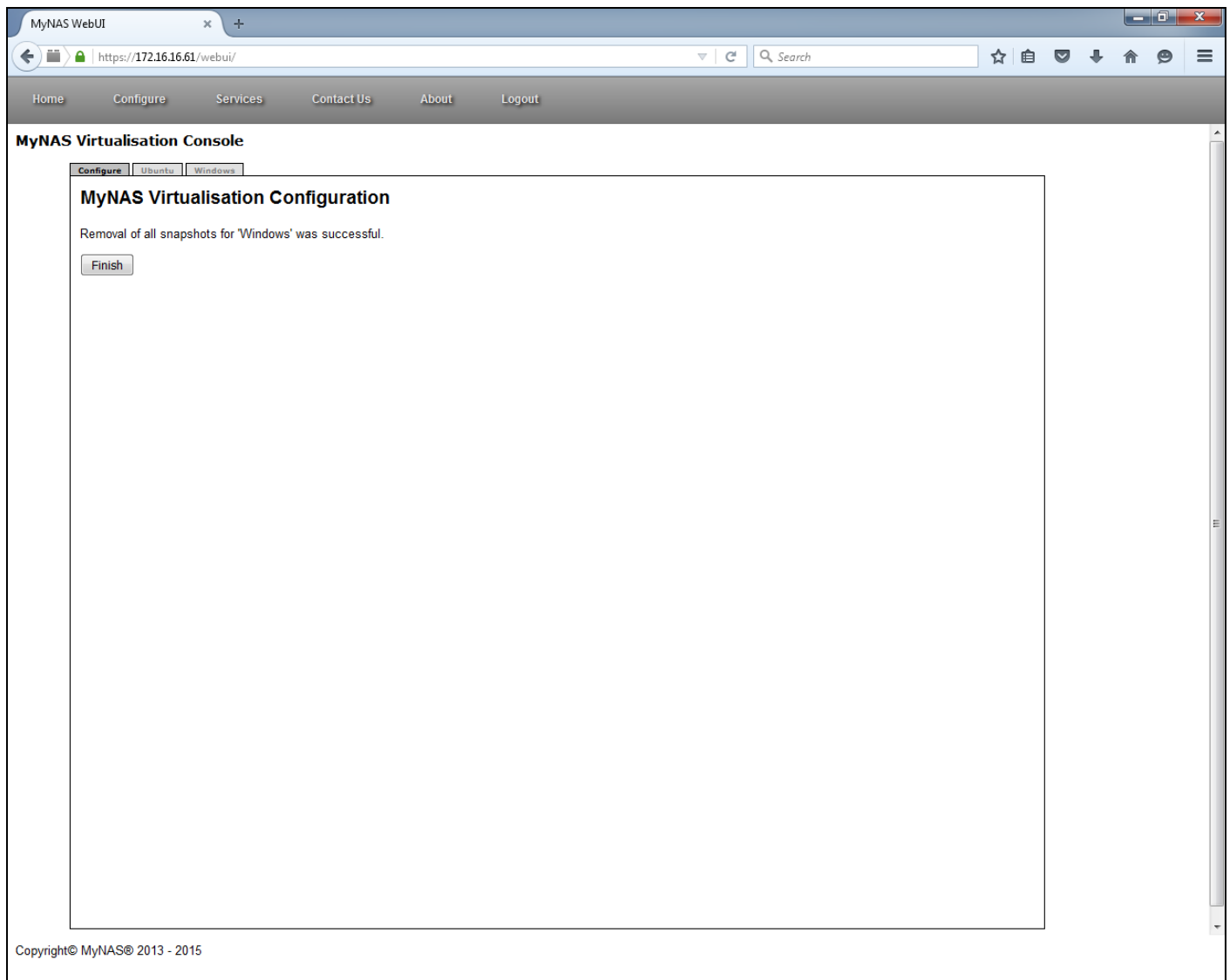
If a particular virtual machine has many unwanted snapshots, or you want to remove all snapshots for a particular machine, use this function to remove them.



Select the virtual machine for snapshot removal, click 'Next'



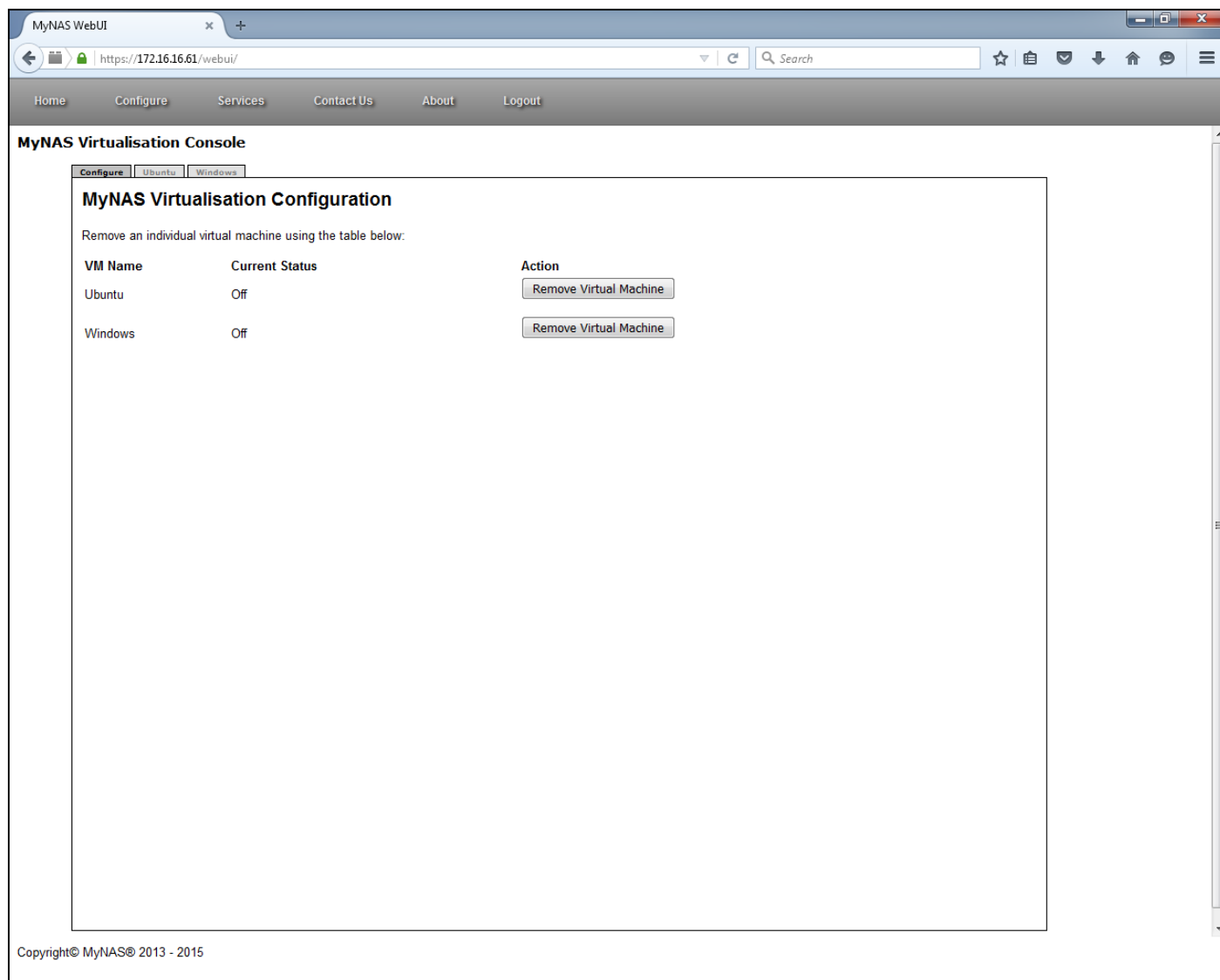
If all is confirmed, click 'Yes. Remove Snapshots'



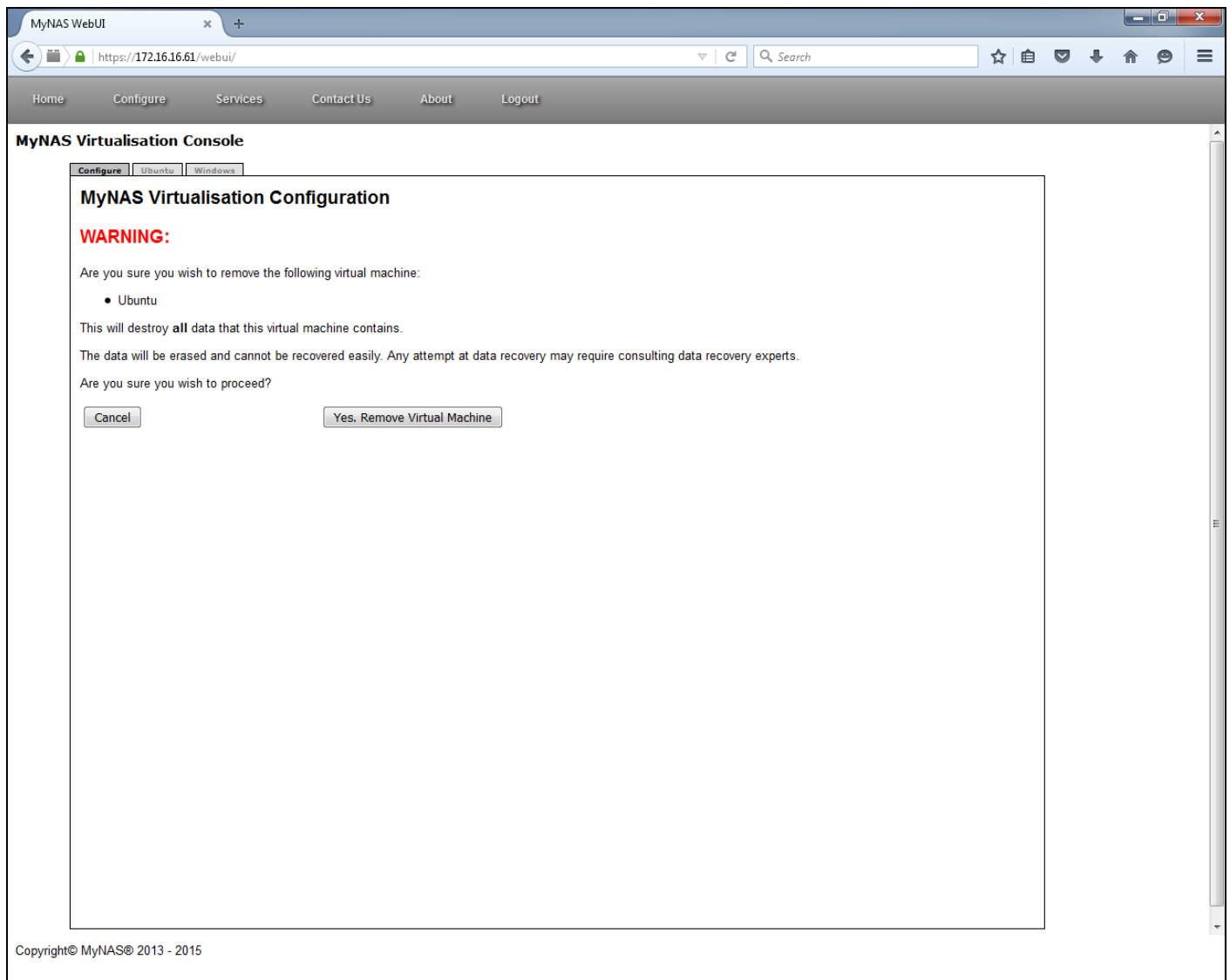
Click 'Finish' to complete the process.

Delete a Virtual Machine

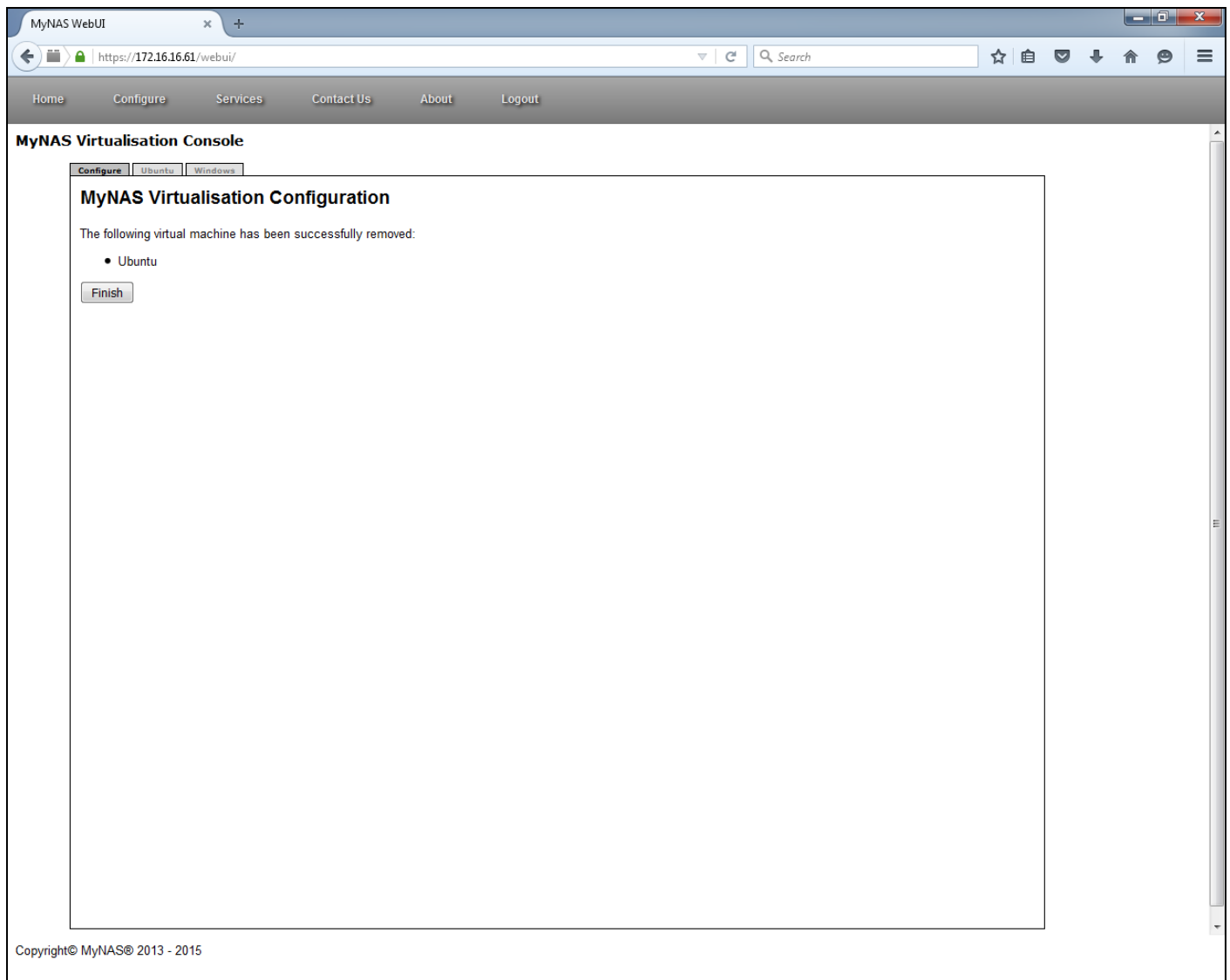
Deleting a virtual machine removes it from your system and is a destructive process. To remove a virtual machine, click the 'Delete Virtual Machine' button.



Select the virtual machine to remove by clicking on the appropriate 'Remove Virtual Machine' button.



Confirm that this is the virtual machine to remove. If it is, click the 'Yes. Remove Virtual Machine' button.

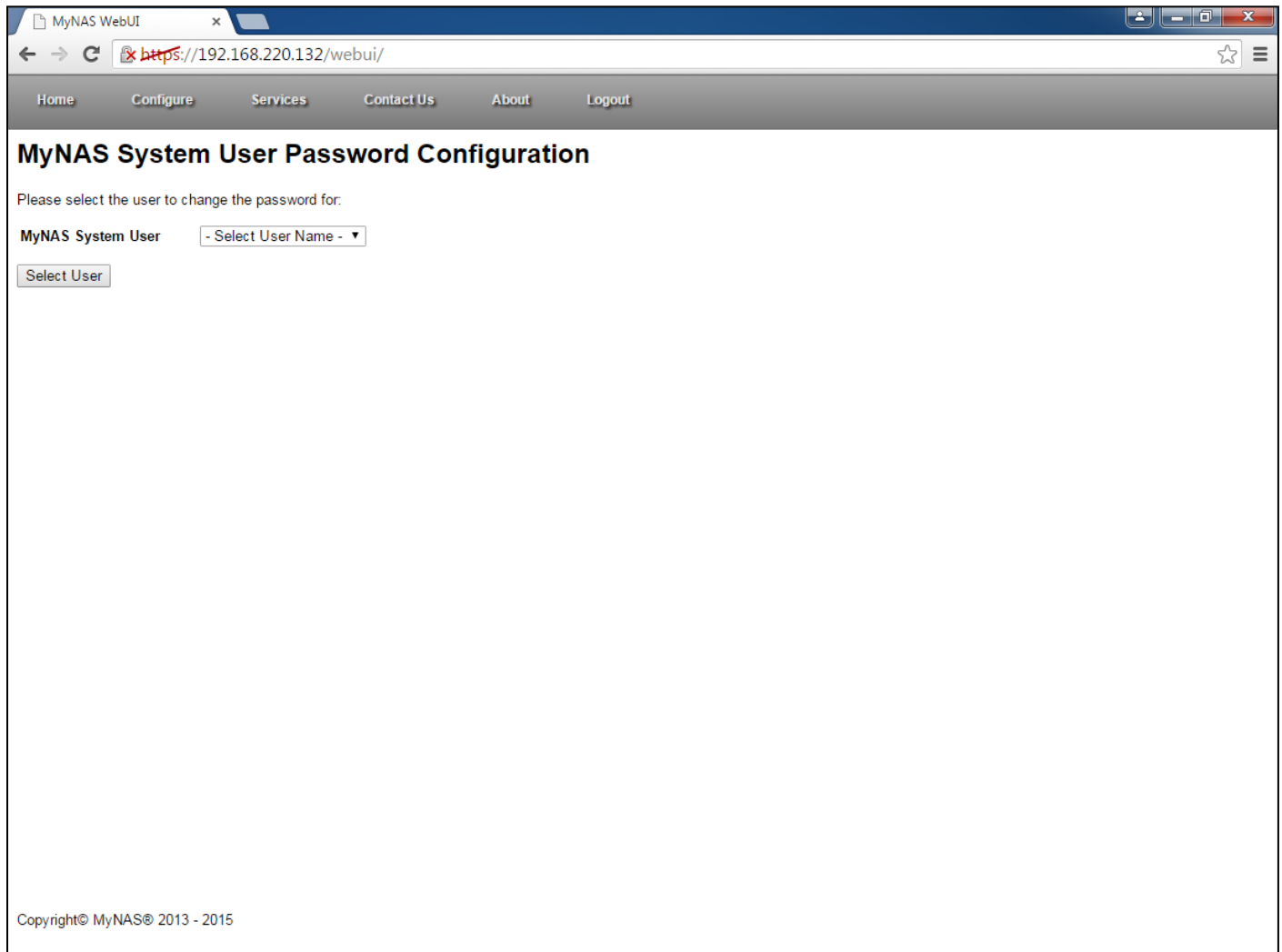


MyNAS will now process the request to remove the virtual machine. Click 'Finish' to complete the process.

Configure System User Passwords

To change the default passwords for the 3 MyNAS Storage Appliance built-in users, follow the directions below.

From the MyNAS WebUI, login as the 'enable' user. From the 'Configure' menu, select 'Configure System User Passwords', and the following will be displayed:



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The browser's navigation bar includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS System User Password Configuration'. Below the title, it says 'Please select the user to change the password for:'. There is a label 'MyNAS System User' followed by a dropdown menu showing '- Select User Name -'. Below the dropdown is a button labeled 'Select User'. At the bottom left of the page, the copyright notice 'Copyright© MyNAS® 2013 - 2015' is visible.

From the drop down menu, select the user which you would like to change the password for. Once the user is selected, click the 'Select User' button.

MyNAS WebUI x

← → ↻ ~~https://192.168.220.132/webui/~~ ☆ ☰

Home Configure Services Contact Us About Logout

MyNAS System User Password Configuration

Enter in the current user password together with the new password to successfully change the selected user's password.

The new password must also meet the following complexity requirements:

- The password must be longer than 6 characters
- The password must not be based on a dictionary word
- The password cannot contain the username or reverse username
- The password must have at least 2 upper case characters
- The password must have at least 2 number characters
- The password must have at least 2 special characters

MyNAS System User admin

Old Password

New Password

Confirm Password

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Type in the existing user password, along with the new password and confirmation.

Note: The password must conform to the following password complexity requirements:

- The password must be longer than 6 characters
- The password must not be based on a dictionary word
- The password cannot contain the username or reverse username
- The password must have at least 2 upper case characters
- The password must have at least 2 number characters
- The password must have at least 2 special characters

Once the passwords have been entered, click the 'Change Password' button. MyNAS will now process the request

MyNAS WebUI

← → × <https://192.168.220.132/webui/> ☆ ≡

[Home](#) [Configure](#) [Services](#) [Contact Us](#) [About](#) [Logout](#)

MyNAS System User Password Configuration

Enter in the current user password together with the new password to successfully change the selected user's password.

The new password must also meet the following complexity requirements:

- The password must be longer than 6 characters
- The password must not be based on a dictionary word
- The password cannot contain the username or reverse username
- The password must have at least 2 upper case characters
- The password must have at least 2 number characters
- The password must have at least 2 special characters

MyNAS System User: admin

Old Password:

New Password:

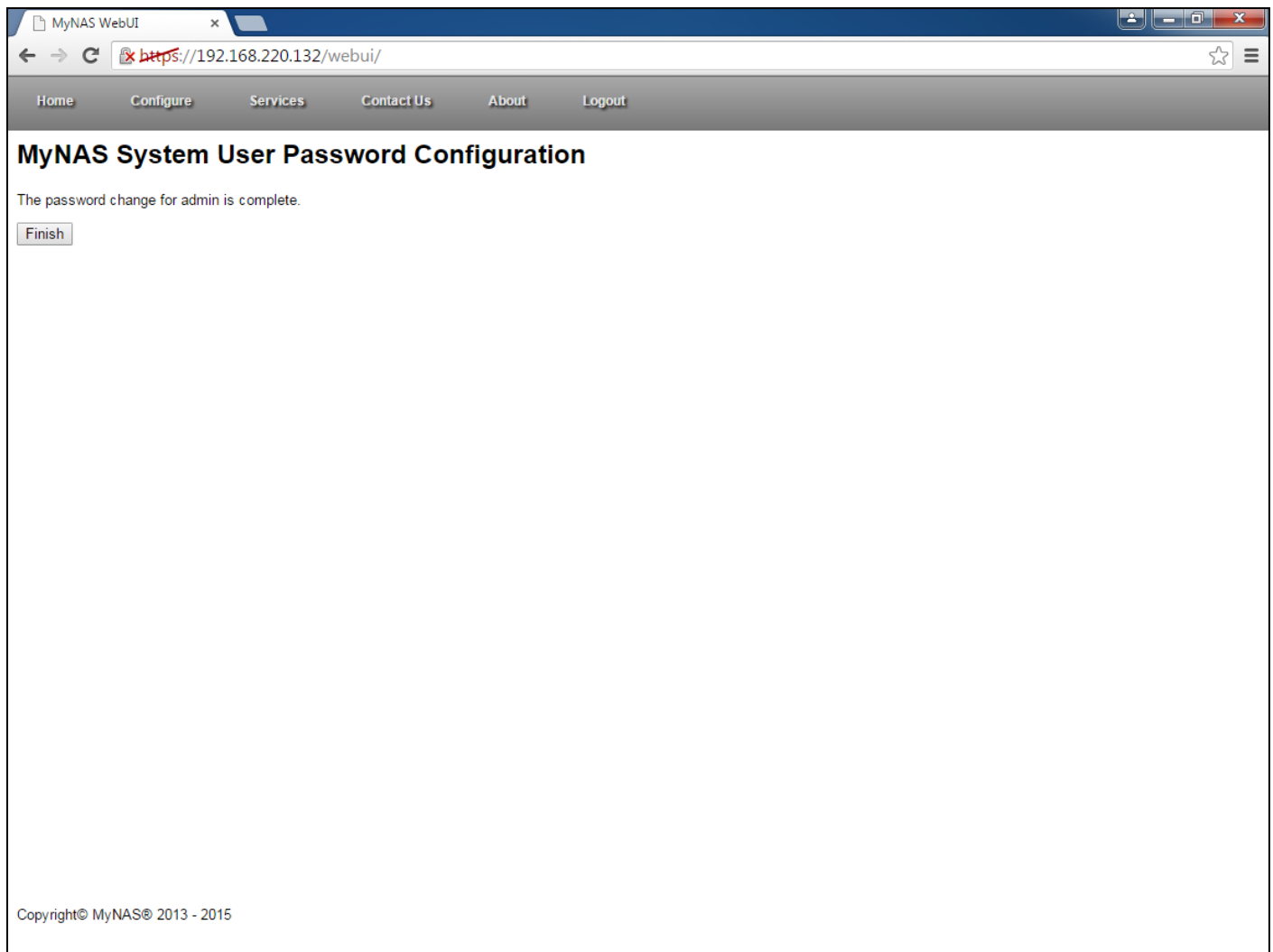
Confirm Password:

PROCESSING. PLEASE WAIT...

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Waiting for 192.168.220.132...

Once complete, MyNAS will display the following:



Click Finish to complete the process.

Note: If changing the 'enable' user password, you will be automatically logged out, requiring to log back in with the new password.

Backup and Restore your MyNAS Configuration

MyNAS provides the capability to backup and restore your configuration. This is useful in the following circumstances:

- Moving your data drives to a new system
- Re-install of MyNAS

Backup your existing configuration

To backup your existing configuration, click on the About menu and select the 'Configuration Backup & Restore' option:

The screenshot shows the MyNAS WebUI interface. The 'About' menu is open, displaying options: System Configuration, Performance Information, System Updates, Configuration Backup & Restore (highlighted), and Reboot & Shutdown. The main dashboard includes sections for System Information, Software Information, MyNAS Data Share Information, Storage Device Health, and Storage Utilisation.

System Information

Hostname	mynas-doc.localdomain
Version	MyNAS Release 1.3 (Yarra)
Kernel Version	3.14.56-2.el6.x86_64
IP Address	192.168.220.132
DNS Servers	192.168.220.2
Current Date and Time	Mon Nov 16 14:12:47 AEDT 2015
Uptime	0 days 5 hour(s) 39 minutes
Load Average	0.00 0.01 0.05

Software Information

Processors	1
CPU	Intel(R) Core(TM) i7-5600U CPU @ 2.60GHz
Frequency	2.59 GHz
Cache Size	4096 KB
System Bogomips	5188.09
System Memory	2003.36 MB
Free Memory	1106.40 MB
System UUID	564DDC64-74A4-4FAC-C4E2-A47E11FC56F6

Storage Device Health

Device Name	Status	Disk Age
/dev/sda	SMART Health Status: OK	N/A
/dev/sdb	SMART Health Status: OK	N/A
/dev/sdc	SMART Health Status: OK	N/A
/dev/sdd	SMART Health Status: OK	N/A
/dev/sde	SMART Health Status: OK	N/A
/dev/sdf	SMART Health Status: OK	N/A
/dev/sdg	SMART Health Status: OK	N/A
/dev/sdh	SMART Health Status: OK	N/A
/dev/sdi	SMART Health Status: OK	N/A
/dev/sdj	SMART Health Status: OK	N/A
/dev/sdk	SMART Health Status: OK	N/A
/dev/sdl	SMART Health Status: OK	N/A

Storage Utilisation

ZFS Pool: storage0

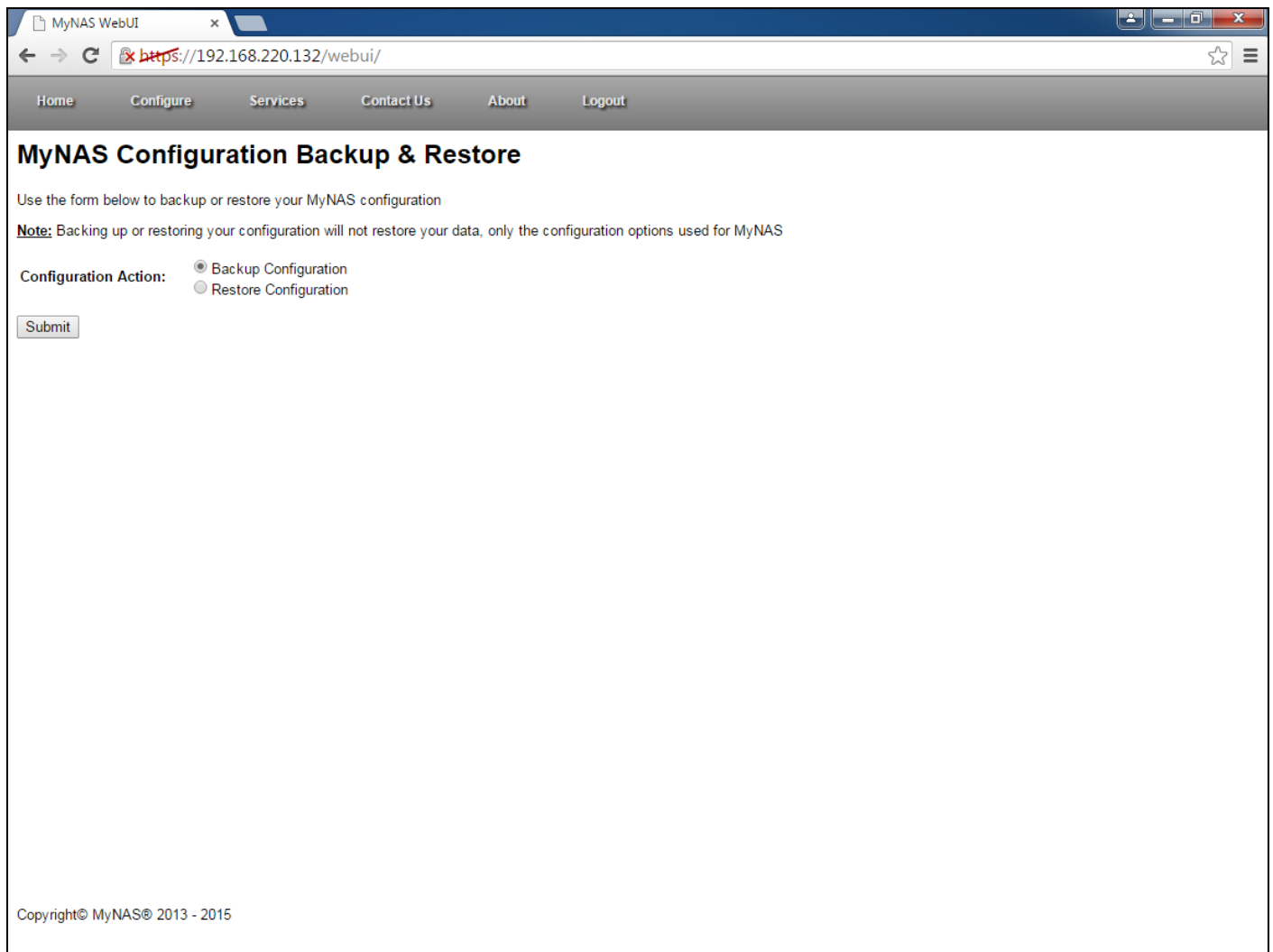
Storage Space Used: 0.01 GB
Total Space Available: 4.81 GB

ZFS Pool: storage1

Storage Space Used: 0.07 GB
Total Space Available: 4.81 GB

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https://192.168.220.132/webui/wizards/config_backup.php

Once selected, the following will be displayed:



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar displays 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS Configuration Backup & Restore'. Below the heading, a message states: 'Use the form below to backup or restore your MyNAS configuration'. A note follows: 'Note: Backing up or restoring your configuration will not restore your data, only the configuration options used for MyNAS'. The 'Configuration Action:' section contains two radio buttons: 'Backup Configuration' (selected) and 'Restore Configuration'. A 'Submit' button is located below the radio buttons. At the bottom left, the copyright notice reads 'Copyright© MyNAS® 2013 - 2015'.

MyNAS WebUI

https://192.168.220.132/webui/

Home Configure Services Contact Us About Logout

MyNAS Configuration Backup & Restore

Use the form below to backup or restore your MyNAS configuration

Note: Backing up or restoring your configuration will not restore your data, only the configuration options used for MyNAS

Configuration Action:

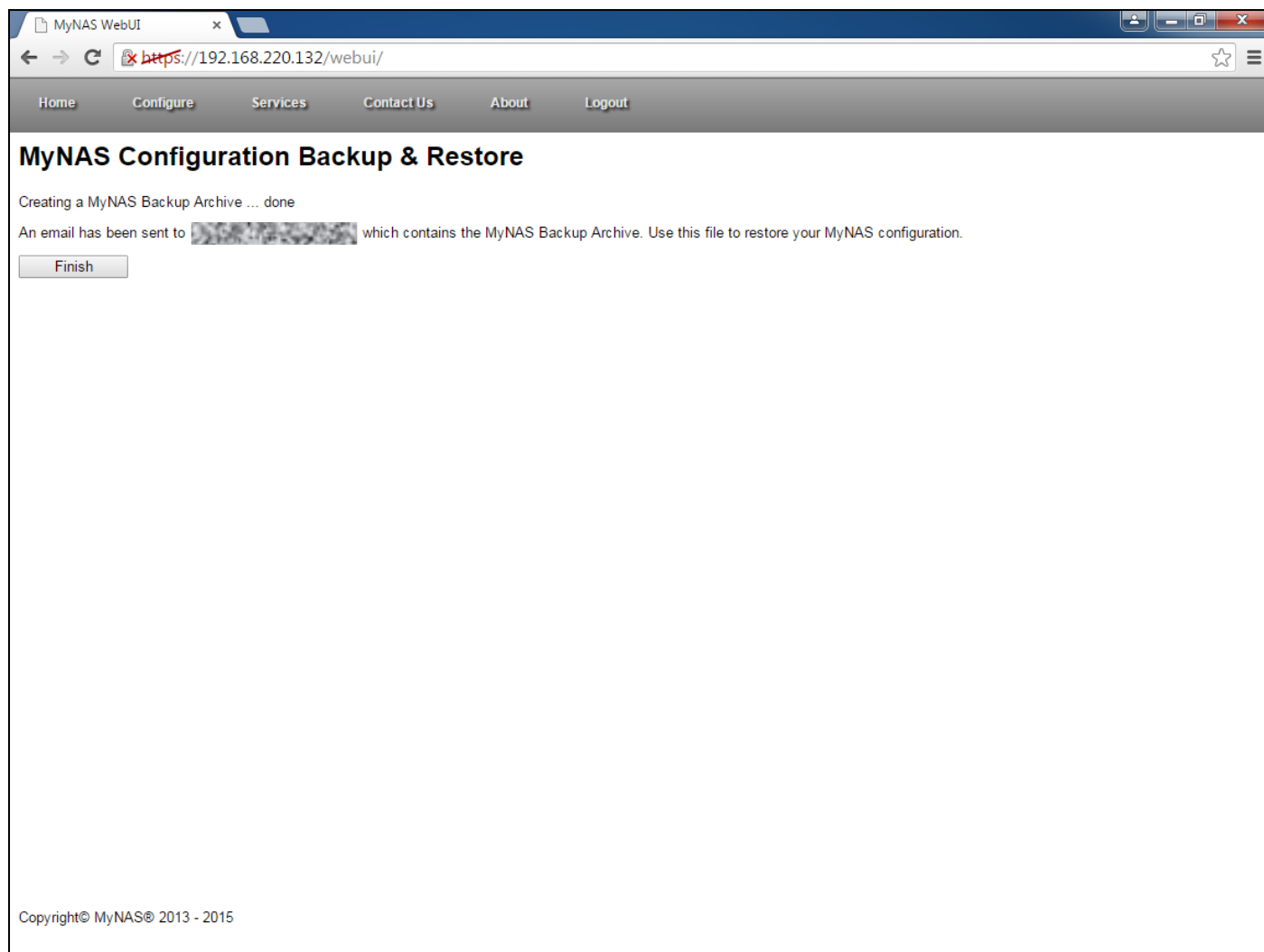
☒ Backup Configuration
☐ Restore Configuration

Submit

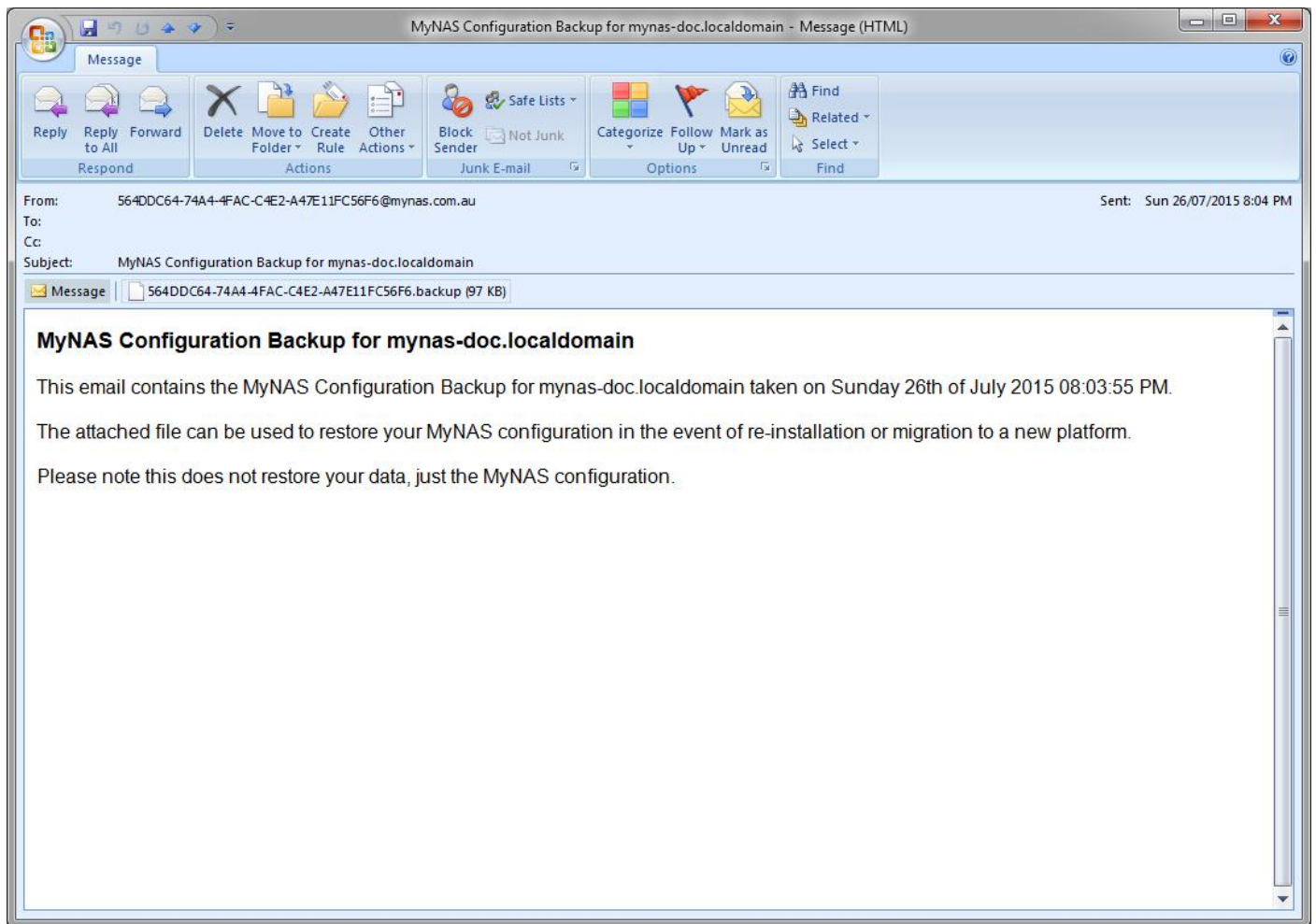
Copyright© MyNAS® 2013 - 2015

The default option is to backup your configuration. Click 'Submit' to complete the action.

MyNAS will now perform the backup operation:



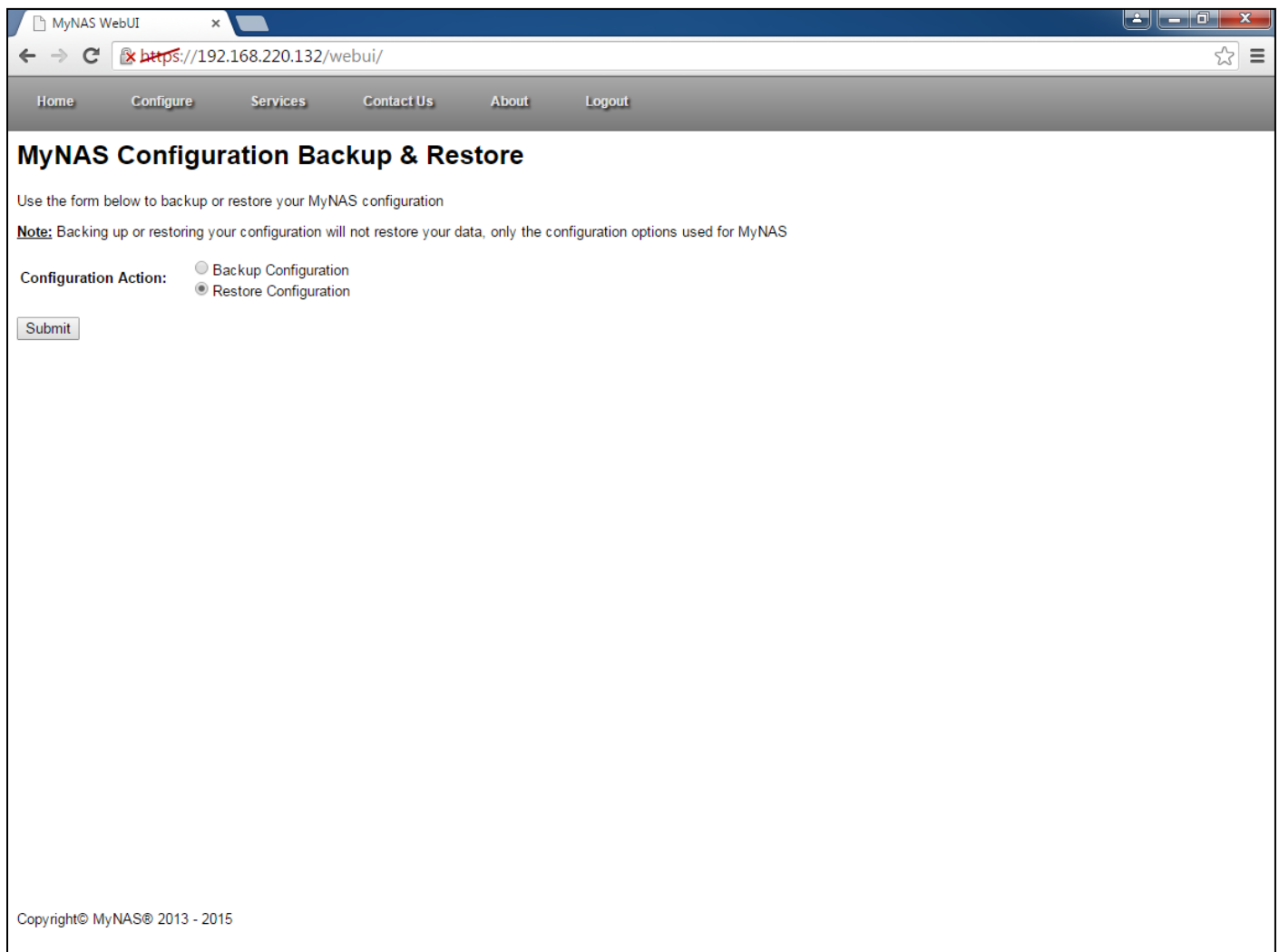
The contents of the email is as follows:



The attached .backup file contains all the required information to restore your MyNAS configuration.

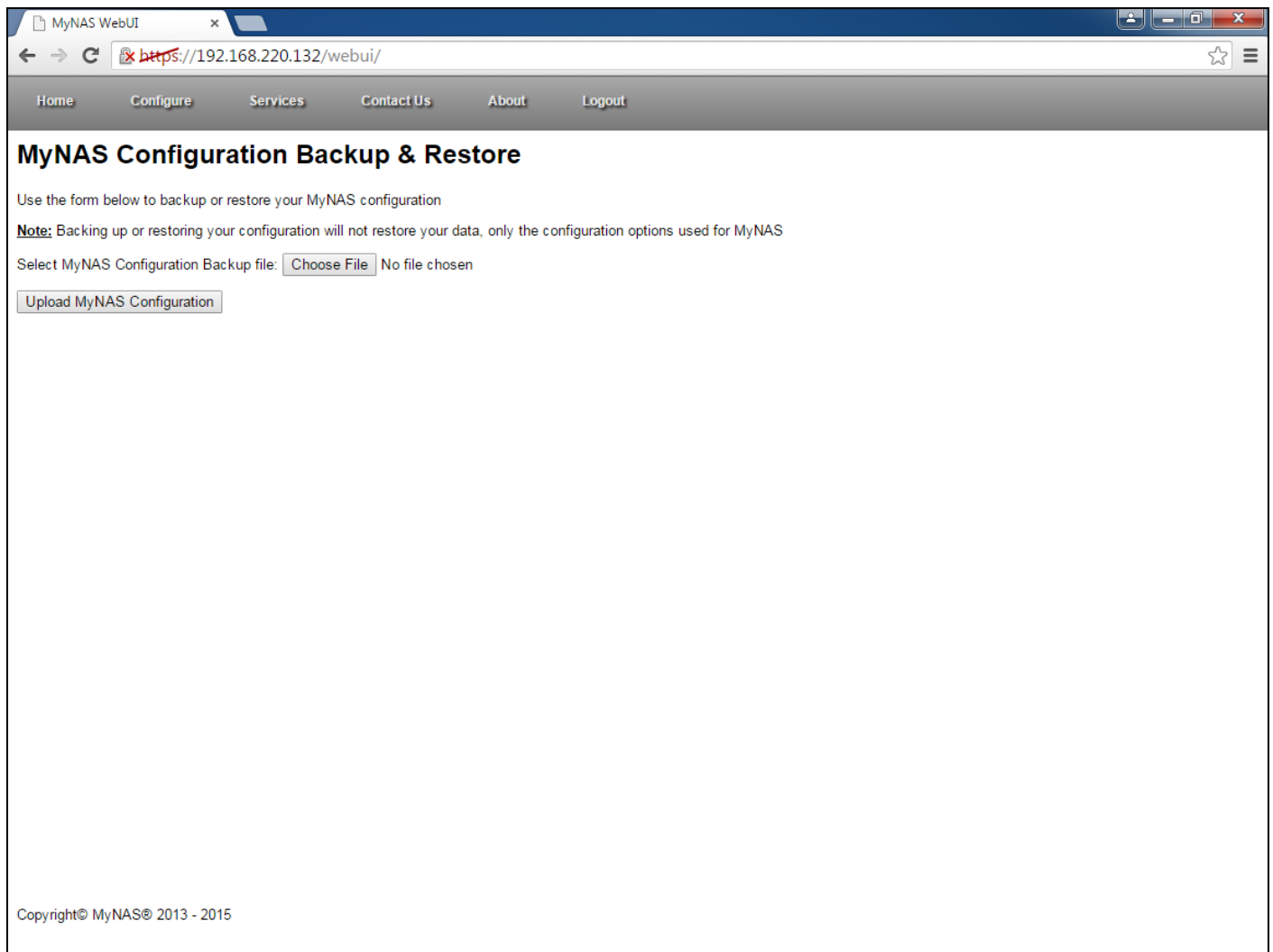
Restoring your MyNAS configuration

To backup your existing configuration, click on the About menu and select the 'Configuration Backup & Restore' option, and click the radio button to restore your configuration:



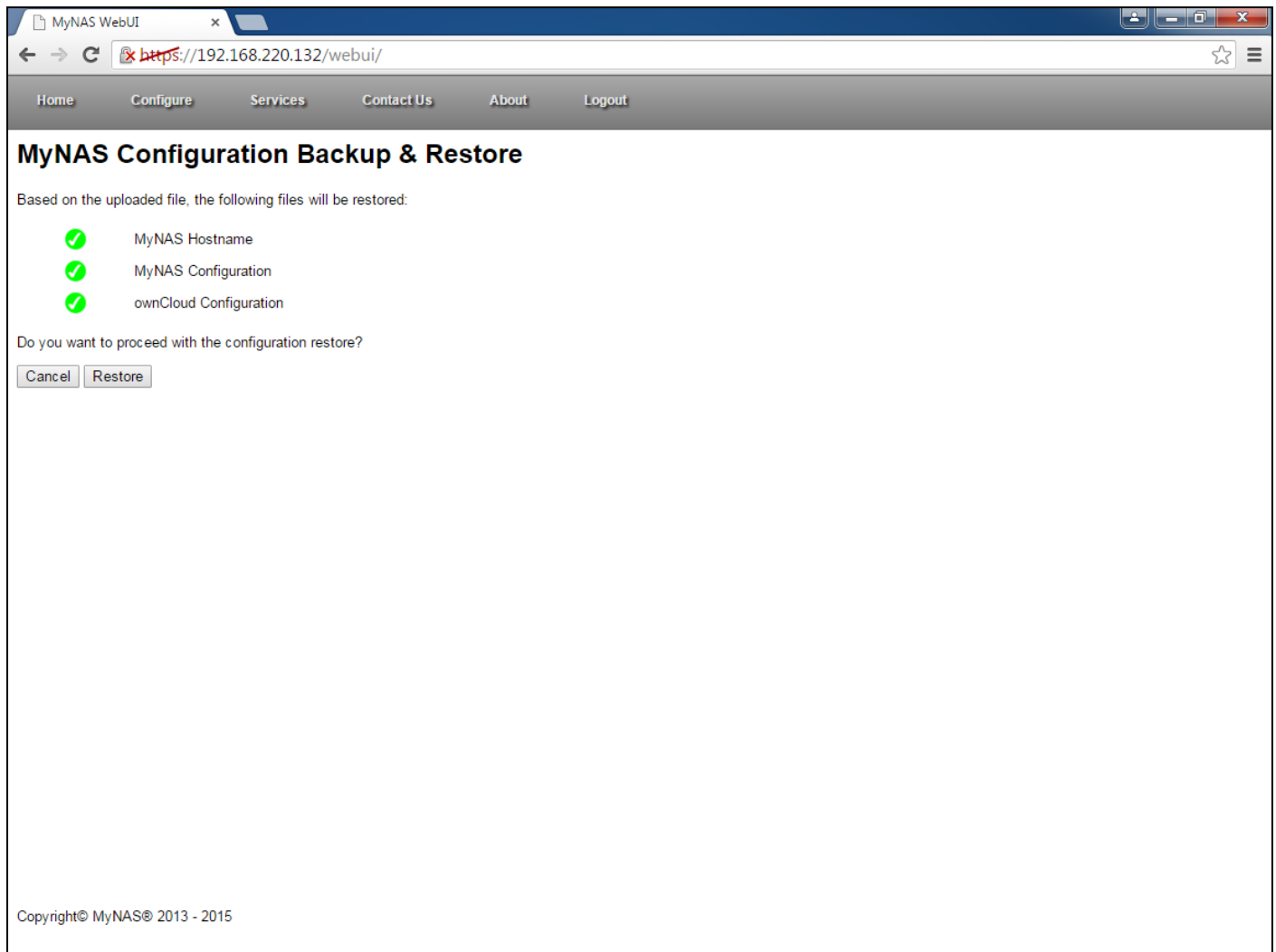
The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar shows 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS Configuration Backup & Restore'. Below the heading, it says 'Use the form below to backup or restore your MyNAS configuration'. A note states: 'Note: Backing up or restoring your configuration will not restore your data, only the configuration options used for MyNAS'. Under 'Configuration Action:', there are two radio buttons: 'Backup Configuration' and 'Restore Configuration'. The 'Restore Configuration' option is selected. A 'Submit' button is located below the radio buttons. At the bottom left, the copyright notice reads 'Copyright© MyNAS® 2013 - 2015'.

Click 'Submit' with the Restore Configuration option selected



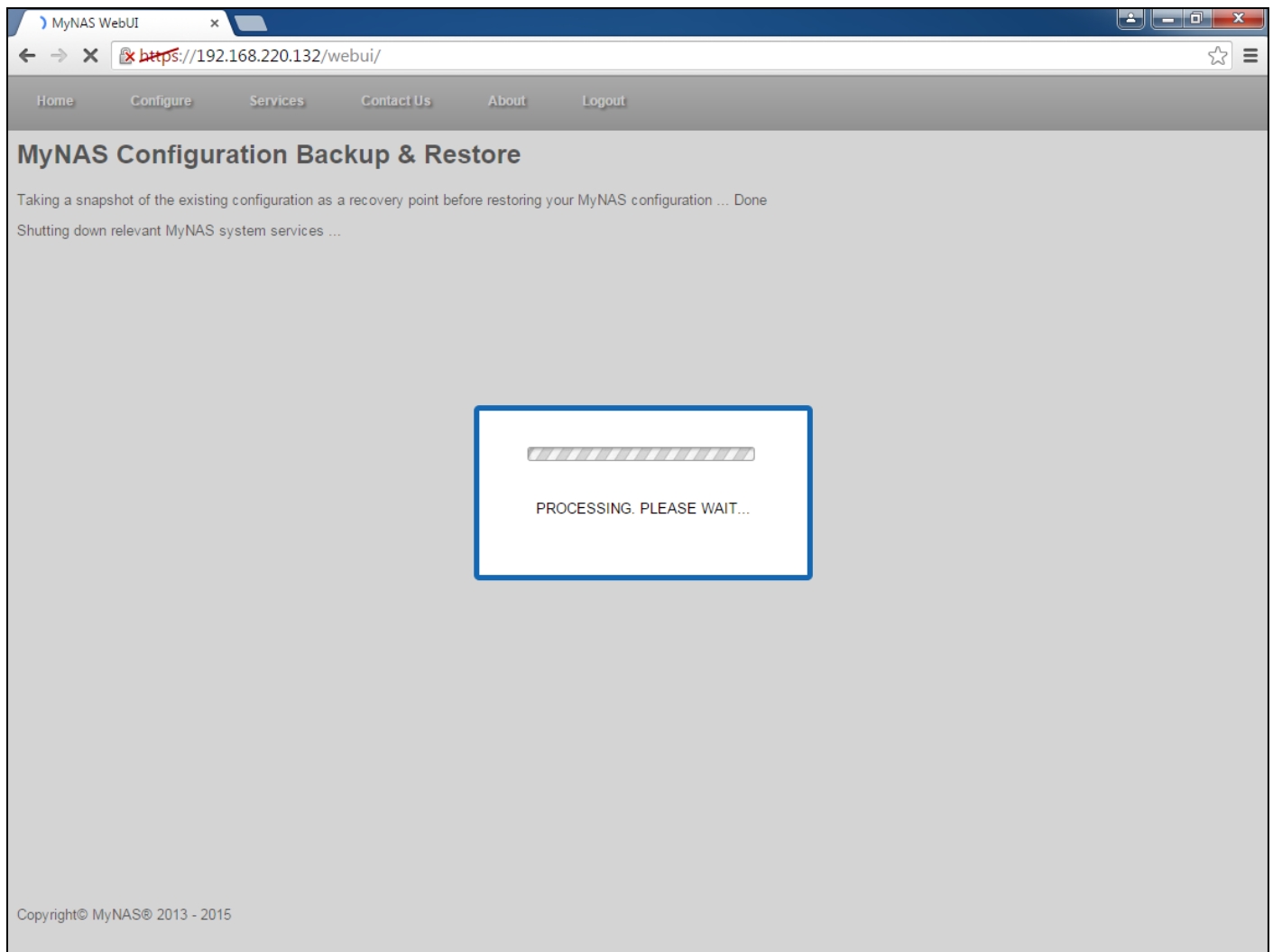
Click the 'Choose File' button, and select the applicable MyNAS Backup file to restore the configuration with. Once the right file is selected, click the 'Upload MyNAS Configuration' button.

MyNAS will now test the integrity of the file you have selected. If the integrity of the file is OK, it will be processed to advise what will be restored as part of this file:

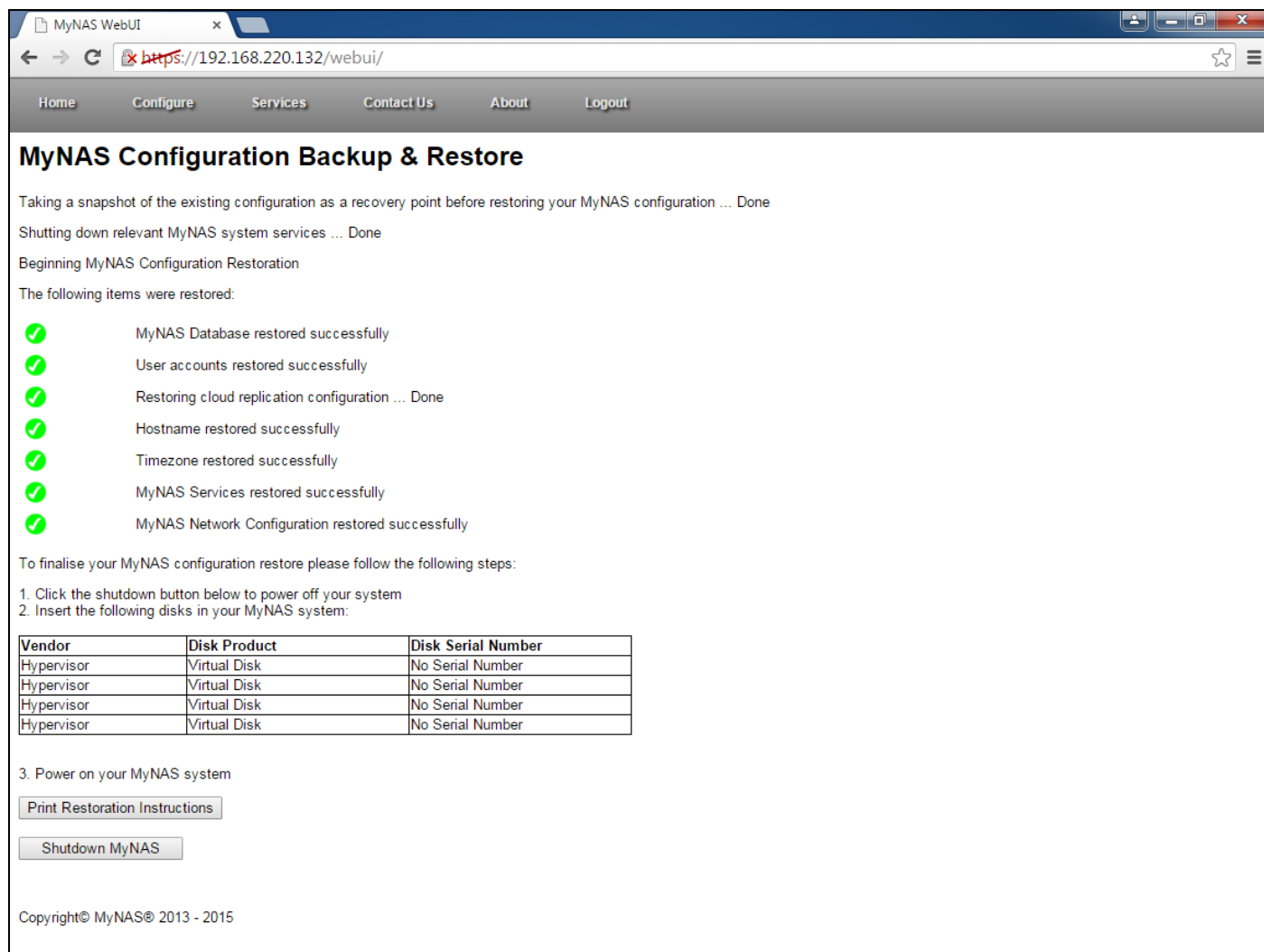


If you are happy to proceed with the restore, click the 'Restore' button.

MyNAS will now shutdown various services to begin the restoration process:



Once the restoration is complete, the following will be displayed, detailing the final restoration instructions:



MyNAS WebUI

← → ↻ ~~https://~~192.168.220.132/webui/ ☆ ≡

Home Configure Services Contact Us About Logout

MyNAS Configuration Backup & Restore

Taking a snapshot of the existing configuration as a recovery point before restoring your MyNAS configuration ... Done

Shutting down relevant MyNAS system services ... Done

Beginning MyNAS Configuration Restoration

The following items were restored:

- ✓ MyNAS Database restored successfully
- ✓ User accounts restored successfully
- ✓ Restoring cloud replication configuration ... Done
- ✓ Hostname restored successfully
- ✓ Timezone restored successfully
- ✓ MyNAS Services restored successfully
- ✓ MyNAS Network Configuration restored successfully

To finalise your MyNAS configuration restore please follow the following steps:

1. Click the shutdown button below to power off your system
2. Insert the following disks in your MyNAS system:

Vendor	Disk Product	Disk Serial Number
Hypervisor	Virtual Disk	No Serial Number
Hypervisor	Virtual Disk	No Serial Number
Hypervisor	Virtual Disk	No Serial Number
Hypervisor	Virtual Disk	No Serial Number

3. Power on your MyNAS system

[Print Restoration Instructions](#)

[Shutdown MyNAS](#)

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Print out the instructions if required, and click the 'Shutdown MyNAS' button.

Whilst your MyNAS Storage Appliance is shutdown, perform the required disk operations before powering on the MyNAS Storage Appliance again.

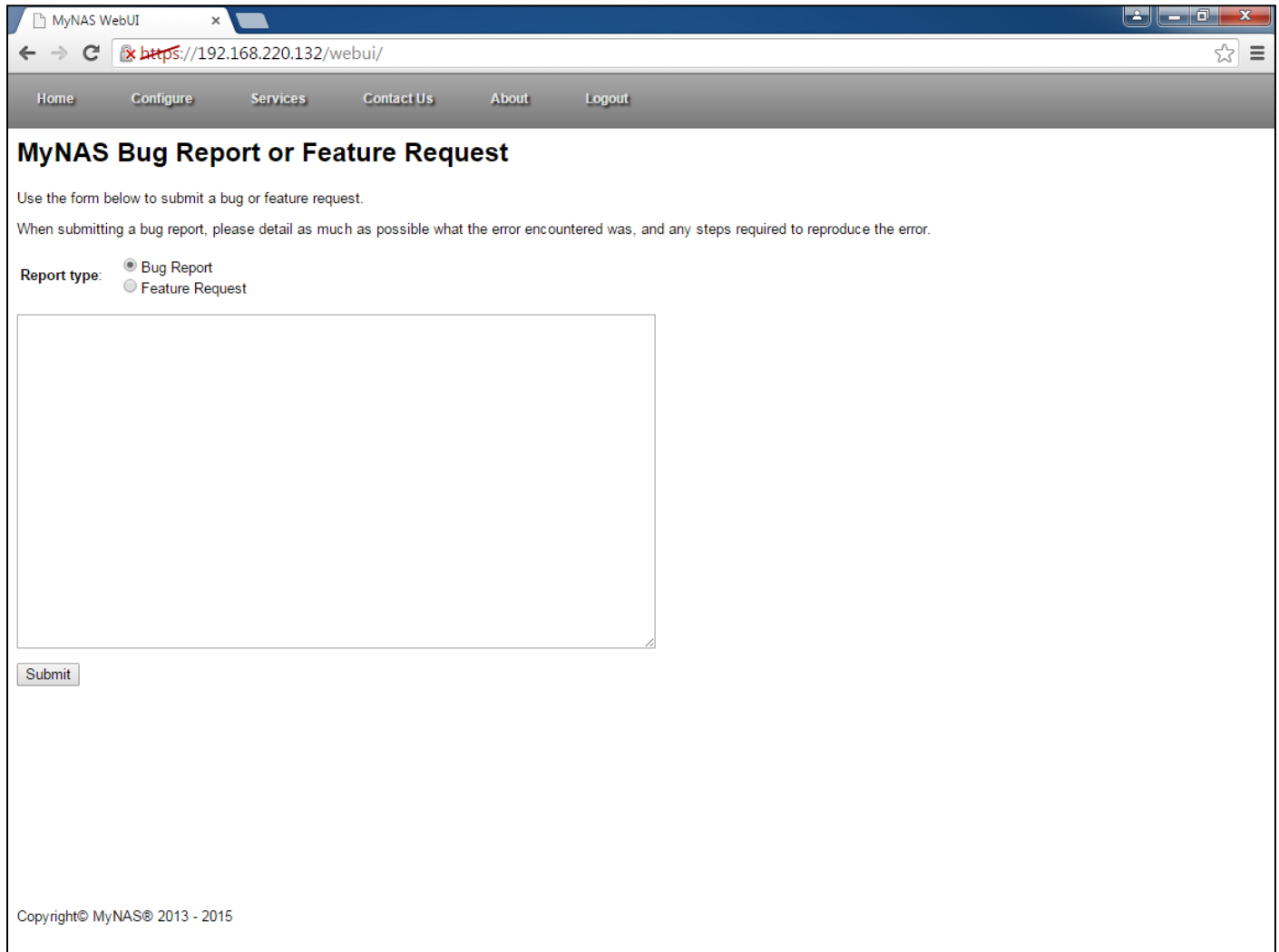
Contact MyNAS Support

There are two ways to obtain support for MyNAS for any issue uncovered or for technical support. These are:

- Use the MyNAS WebUI to submit a support request / log a feature request via email
- Access the MyNAS forums

Submit a support request via email

To submit a support request via email, log in to the MyNAS WebUI, and select the 'Contact Us' menu. From the drop down, select to 'Report a Bug or Feature Request', and the following will be displayed:



The screenshot shows a web browser window with the title 'MyNAS WebUI'. The address bar shows a URL starting with 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main heading is 'MyNAS Bug Report or Feature Request'. Below the heading, there is a text area for the report. The 'Report type' section has two radio buttons: 'Bug Report' (selected) and 'Feature Request'. A 'Submit' button is located at the bottom left of the form. The footer text reads 'Copyright© MyNAS® 2013 - 2015'.

Fill in all the appropriate details regarding your situation, problem including any detailed steps on how to reproduce, or if it is feature request, detail your request as much as possible. Once complete, click the Submit button and an email will be generated from your MyNAS installation to MyNAS support.

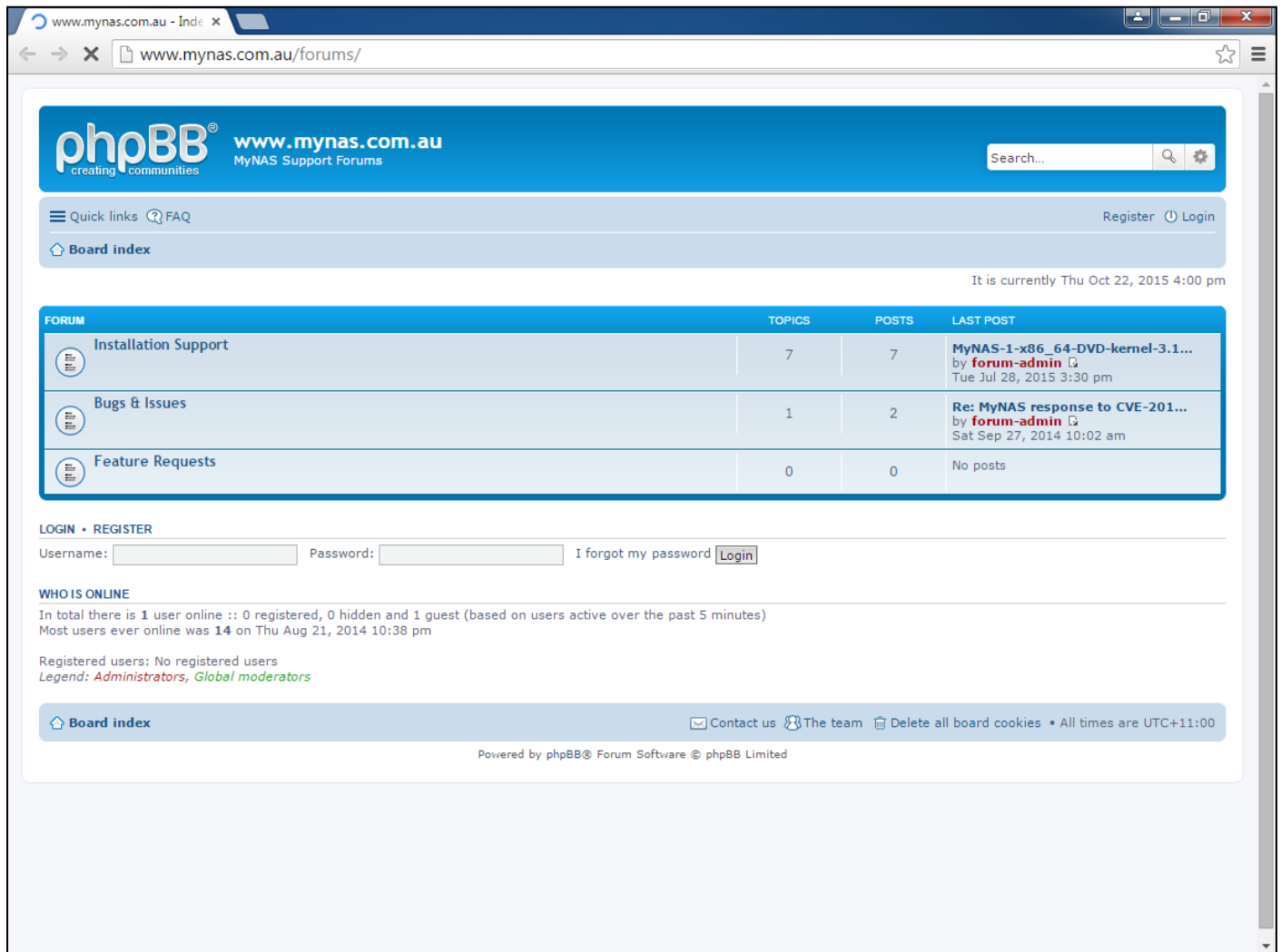
Alternatively, if you wish to email MyNAS support directly, send your email to:

support@mynas.com.au



Support via the MyNAS Support Forums

Clicking on the second link 'MyNAS Support Forums', this will open a new browser page to the MyNAS support forums.

Register as a new user and submit your support request or feature request in the appropriate location.



The screenshot displays the MyNAS Support Forums interface. At the top, there's a navigation bar with the phpBB logo, the website URL (www.mynas.com.au), and a search bar. Below this, a secondary bar contains quick links, a FAQ icon, and buttons for Register and Login. The main content area features a forum index table with columns for Forum, Topics, Posts, and Last Post. The index lists three categories: Installation Support, Bugs & Issues, and Feature Requests. Below the index, there's a login/register section with fields for Username and Password, and a 'Login' button. A 'Who is Online' section indicates that 1 user is currently online. The footer includes a 'Board index' link, contact information, and a copyright notice for phpBB.

FORUM	TOPICS	POSTS	LAST POST
Installation Support	7	7	MyNAS-1-x86_64-DVD-kernel-3.1... by forum-admin  Tue Jul 28, 2015 3:30 pm
Bugs & Issues	1	2	Re: MyNAS response to CVE-201... by forum-admin  Sat Sep 27, 2014 10:02 am
Feature Requests	0	0	No posts

It is currently Thu Oct 22, 2015 4:00 pm

LOGIN • REGISTER

Username: Password: I forgot my password [Login](#)

WHO IS ONLINE

In total there is **1** user online :: 0 registered, 0 hidden and 1 guest (based on users active over the past 5 minutes)
Most users ever online was **14** on Thu Aug 21, 2014 10:38 pm

Registered users: No registered users
Legend: **Administrators**, *Global moderators*

[Board index](#) [Contact us](#) [The team](#) [Delete all board cookies](#) • All times are UTC+11:00

Powered by phpBB® Forum Software © phpBB Limited

MyNAS System and Performance Information

MyNAS provides an insight to the performance of your hardware when running MyNAS. To look at the performance information, login to the WebUI as either the 'admin' or 'enable' user, and under the 'About' menu item there are the following menu items:

System Configuration

This item provides the following details in regards to your MyNAS installation:

- Storage Utilisation
- ZFS Pool Configuration
- ZFS Volume Configuration
- MyNAS Services Configuration
- Data Share Information
- iSCSI Target Details

The screenshot shows the MyNAS WebUI interface. The browser address bar displays `https://192.168.220.132/webui/`. The navigation menu includes Home, Configure, Services, Contact Us, About, and Logout. The main content area is titled "MyNAS System Configuration" and states "MyNAS system configuration is detailed below:". A sidebar on the left contains expandable sections: Storage Utilisation (expanded), ZFS Pool Configuration, ZFS Volume Configuration, MyNAS Services Configuration, MyNAS Data Share Information, and iSCSI Target Details.

Storage Utilisation

Device	File System	Storage Space Used	Total Space Available
md0	Swap Space	0 GB	0.97 GB
md1	Boot File System	0.04 GB	0.23 GB
md2	Root File System	1.94 GB	5.53 GB

ZFS Pool Configuration

ZFS Pool	Storage Space Used	Total Space Available
storage0	0 GB	4.81 GB
storage1	0 GB	4.81 GB

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Performance Information

This item provides information around the following performance items for MyNAS:

- System Level utilisation
- System Level iostat
- System Level memory statistics
- System Level kernel slab cache
- ZFS Pool disk performance
- ZFS Pool iostat
- ZFS Volume arcstats
- ZFS Volume vdev cache fetch stats
- ZFS Volume zfs fetch stats
- ZFS Volume zfs zil stats

MyNAS WebUI

Home Configure Services Contact Us About Logout

MyNAS Performance Information

MyNAS performance information is detailed below:

System Level utilisation

15:54:47	CPU	%usr	%nice	%sys	%iowait	%irq	%soft	%steal	%guest	%idle
15:54:47	all	0.93	0.00	1.86	0.07	0.00	0.01	0.00	0.00	97.12

System Level iostat

Linux 3.14.54-3.el6.x86_64 (mynas-doc.localdomain) 10/22/15 _x86_64_ (1 CPU)

avg-cpu:	%user	%nice	%system	%iowait	%steal	%idle
	0.93	0.00	1.88	0.07	0.00	97.11

Device:

	tps	Blk_read/s	Blk_wrtn/s	Blk_read	Blk_wrtn
sda	7.76	236.54	21.65	239191	21892
sdc	1.05	13.14	3.40	13288	3440
sdd	1.04	10.49	3.40	10608	3440
sdb	2.12	28.27	21.65	28590	21892
sde	1.06	12.97	3.74	13112	3784
sdf	1.04	10.28	3.74	10400	3784
sdg	0.33	2.68	0.00	2712	0
sdh	0.33	2.68	0.00	2712	0
sdj	0.33	2.68	0.00	2712	0
sdk	0.62	5.17	0.00	5232	0
sdl	0.73	6.06	0.00	6128	0
md2	6.97	251.89	20.96	254716	21200
md0	0.53	4.21	0.00	4256	0
md1	0.77	4.03	0.03	4078	28

System Level memory statistics

System Level kernel slab cache

ZFS Pool: disk performance

ZFS Pool: iostat

ZFS Volume: arcstats

ZFS Volume: vdev cache stats

ZFS Volume: zfs fetch stats

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Performance benchmarking your MyNAS Installation

Several tools are available for benchmarking NAS installs. Two of the most popular are:

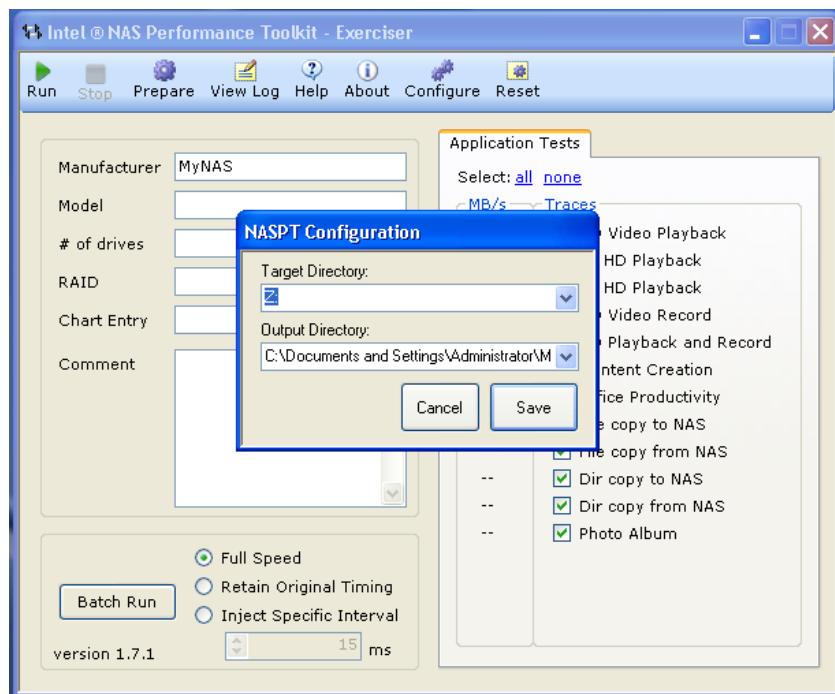
1. Intel NAS Performance Benchmark Toolkit
Downloadable from <http://www.intel.com/content/www/us/en/storage/nas-performance-toolkit.html>
2. CrystalDiskMark
Downloadable from <http://crystalmark.info/software/CrystalDiskMark/index-e.html>

To perform a performance benchmark, first map a network drive from MyNAS to your computer.

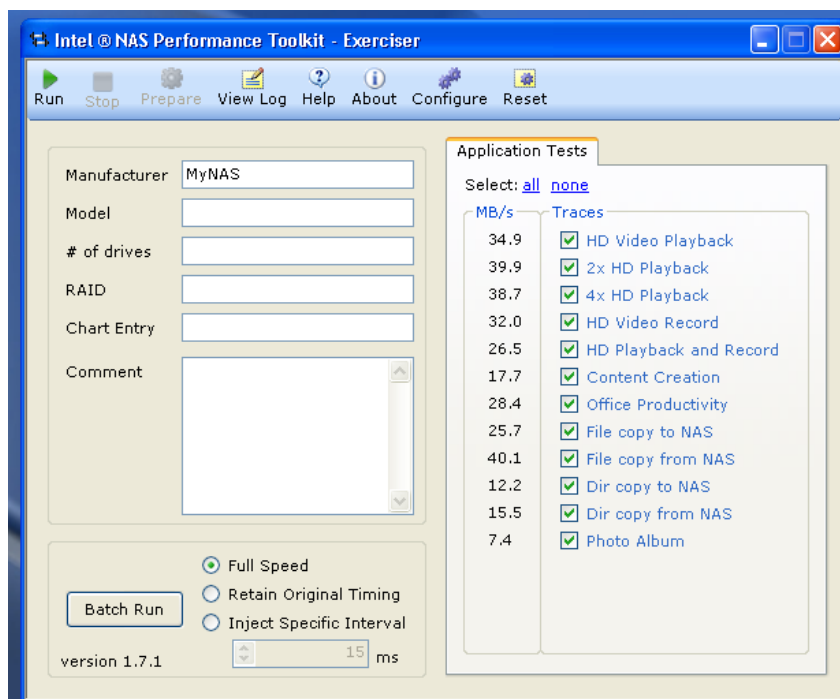
Note: All performance benchmarking is highly subjective to what your actual hardware is. Performance will vary based on the disk, CPU and the network being used.

Intel NAS Performance Toolkit

Once the toolkit is installed, configure the tool to use the mapped network drive as the target directory:



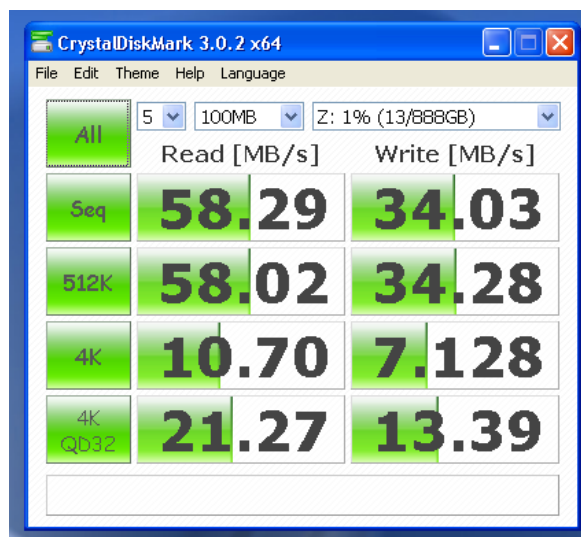
Configure all Application tests, then click the Run button. After running the tests, the performance results will be displayed



Note: The higher the numbers the better

CrystalDiskMark

Point the tool at the mapped drive. Once selected, click the All button to execute all tests against the mapped network drive. Once the benchmarking is complete, you will have some values which can detail how your MyNAS install performs under certain scenarios as illustrated below:

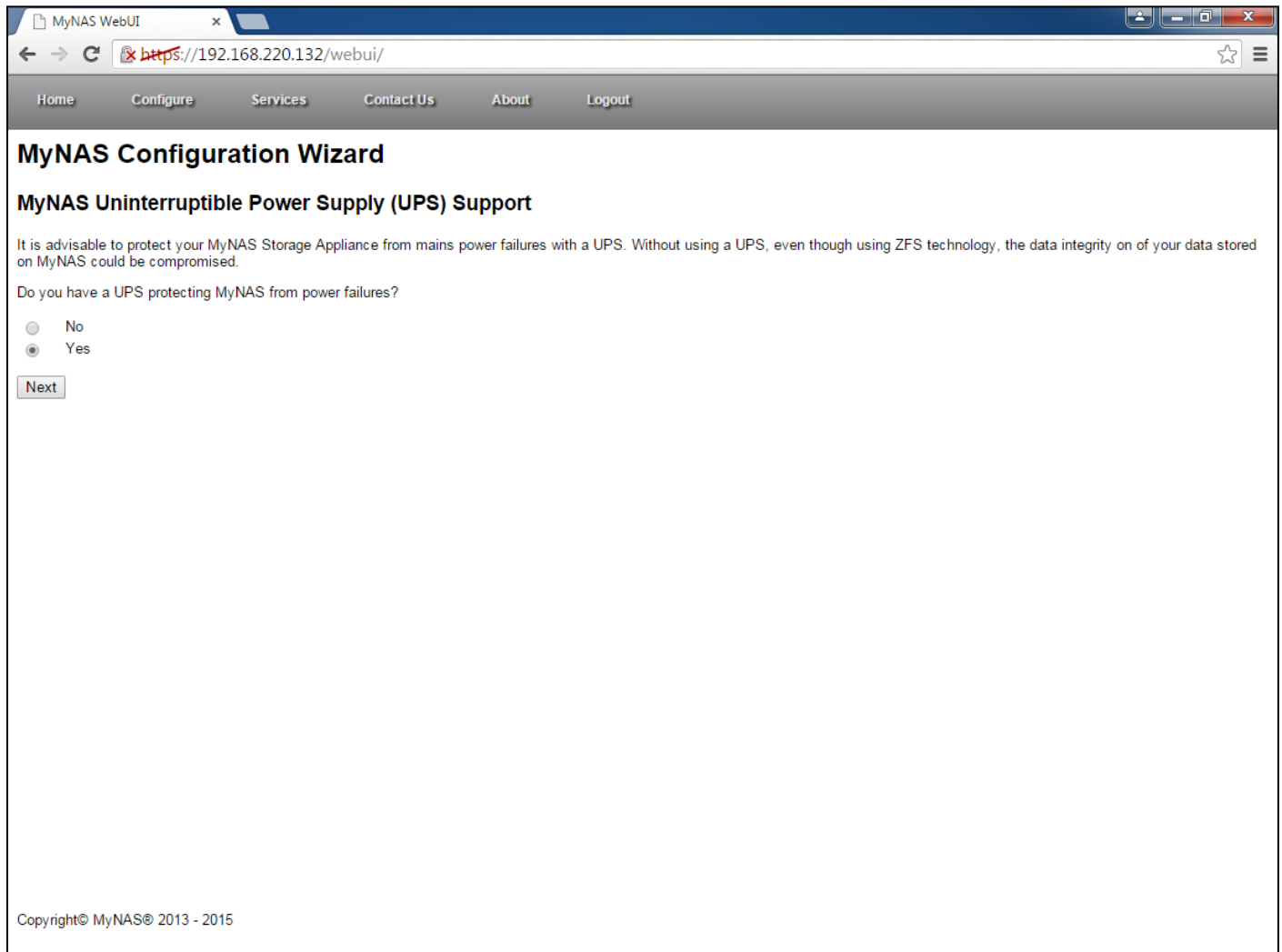


Note: The higher the numbers the better

MyNAS Storage Appliance UPS Support

MyNAS Storage Appliance supports safe shutdown capabilities when a UPS is used in conjunction with the hardware that is being used for your MyNAS Storage Appliance.

During the Initial Setup Wizard, you configure this support by selecting the appropriate option as shown below:



The screenshot shows a web browser window titled 'MyNAS WebUI' with the address bar displaying 'https://192.168.220.132/webui/'. The navigation menu includes 'Home', 'Configure', 'Services', 'Contact Us', 'About', and 'Logout'. The main content area is titled 'MyNAS Configuration Wizard' and 'MyNAS Uninterruptible Power Supply (UPS) Support'. It contains a warning message: 'It is advisable to protect your MyNAS Storage Appliance from mains power failures with a UPS. Without using a UPS, even though using ZFS technology, the data integrity on of your data stored on MyNAS could be compromised.' Below this, it asks 'Do you have a UPS protecting MyNAS from power failures?' with two radio button options: 'No' and 'Yes'. The 'Yes' option is selected. A 'Next' button is located at the bottom left of the form area. The footer of the page reads 'Copyright© MyNAS® 2013 - 2015'.

Once configured, you will receive email alerts regarding the operational status of your UPS.

MyNAS also provides a graphical view of your UPS. To access this, select 'Services' from the menu bar and click 'UPS Monitoring Console':

The screenshot shows the MyNAS WebUI interface in a web browser. The browser's address bar displays `https://192.168.220.132/webui/`. The navigation bar includes links for Home, Configure, Services, Contact Us, About, and Logout. The 'Services' menu is open, showing options: Shell Console, Transmission, Virtualisation, Local ownCloud Server, and **UPS Monitoring Console** (which is highlighted in blue). The main content area is divided into several sections:

- MyNAS Status**: A section with system information including Hostname, Version, Kernel Version, IP Address, DNS Servers, Current Date and Time, Uptime, and Load Average.
- System Information**: A table showing system details like Hostname, Version, Kernel Version, IP Address, DNS Servers, Current Date and Time, Uptime, and Load Average.
- Hardware Information**: A table showing hardware details like Total Processors, Model, CPU Speed, Cache Size, System Bogomips, System Memory, Free Memory, and System UUID.
- MyNAS Data Share Information**: A section with a plus icon and the title 'MyNAS Data Share Information'.
- Storage Device Health**: A table showing the health status of storage devices, including Device Name, Status, and Disk Age.
- Storage Utilisation**: A section showing storage utilization for ZFS Pools, including storage0 and storage1, with progress bars and space usage details.

At the bottom of the page, there is a copyright notice: Copyright© MyNAS® 2013 - 2015, and a URL: `https://192.168.220.132/webui/services/apcupsd.php`.

This will bring up the UPS Monitoring Console detailing elements regarding your UPS:



UPS devices that have been test are:

- Standard USB connected UPS
- APC USB connected UPS

MyNAS Admin User Command Line Interface (CLI) Reference

The admin role provides essentially "read only" access to the MyNAS appliance to provide information as to the current state of various settings. At the admin root level, the following commands are available:

```
>
enable  Enter MyNAS CLI privileged execution mode
exit    Exit MyNAS CLI
show    Show MyNAS current system information
whoami  Display current user name

>
```

The below list of commands provides the details of what information is available at this privilege level.

Command Name	Command Description	Command Example
enable	Change to the "enable" access mode to configure MyNAS from the CLI	<pre>> enable Password: <type in the enable password> Entering MyNAS CLI privileged execution mode... enable#</pre>
show disk <disk name>	Show the details of a particular disk attached to the system. The <disk name> input takes valid entries such as: <ul style="list-style-type: none"> sda sdb sdc 	<pre>> show disk sda Model: VMware, VMware Virtual S (scsi) Disk /dev/sda: 10.7GB Sector size (logical/physical): 512B/512B Partition Table: msdos Number Start End Size Type File system Flags 1 1049kB 4296MB 4295MB primary 2 4296MB 4558MB 262MB primary ext4 boot, raid 3 4558MB 10.7GB 6179MB primary raid ></pre>

Command Name	Command Description	Command Example
show disks	Show all the disks attached to the system that are available for use for adding to a ZFS Pool	<pre>> show disks Available System Disks for ZFS: sdc sdd sde sdf sdg sdh sdi sdj sdk sdl ></pre>
show iscsi targets	Show all the iSCSI targets as configured on the system currently	<pre>> show iscsi targets iSCSI Target #1 Target: ign.2013-05.au.com.mynas.storage:564d7a75.lun4 Backing Store: /dev/zvol/green/iscsi/lun4 Size: 50 GB Provision State: Thin ></pre>
show iscsi targets verbose	Show all the current iSCSI target details, including all connections, block details and backing store	<pre>> show iscsi targets verbose Target 1: ign.2014-11.au.com.mynas.storage:564dc2c2.lun1 System information: Driver: iscsi State: ready I_T nexus information: I_T nexus: 1 Initiator: ign.1991-05.com.microsoft:ABCD-ABCD alias: none Connection: 1 IP Address: 192.168.153.170 I_T nexus: 2 Initiator: ign.1991-05.com.microsoft:EFGH-EFGH alias: none Connection: 1 IP Address: 192.168.153.1 LUN information: LUN: 0 Type: controller SCSI ID: MyNAS 00010000 ></pre>

Command Name	Command Description	Command Example
show kernel messages	<p>Show the kernel messages log when the MyNAS appliance was booting</p> <p>This command also supports CTRL-C to cancel out of viewing the log file.</p>	<pre>> show kernel messages Initializing cgroup subsys cpuset Initializing cgroup subsys cpu Linux version 3.7.10-6.el6.x86_64 (mockbuild@localhost.localdomain) (gcc version 4.4.6 20120305 (Red Hat 4.4.6-4) (GCC)) #1 SMP We d May 22 15:34:43 EST 2013 Command line: ro root=UUID=c8d312d1-258e-4cc6-b09c-c239f02ec09a rd_NO_LUKS KEYBOARDTYPE=pc KEYTABLE=us LANG=en_US.UTF-8 rd_MD_UUID =7f4f5aa4:0978a4b6:625f733e:1974a468 SYSFONT=latarcyrheb-sun16 crashkernel=auto rd_NO_LVM rd_MD_UUID=2b986a70:8d2767b1:e3c13a47:237 01874 rd_NO_DM rhgb quiet Disabled fast string operations e820: BIOS-provided physical RAM map: BIOS-e820: [mem 0x0000000000000000-0x00000000000009f7ff] usable BIOS-e820: [mem 0x00000000000009f800-0x00000000000009ffff] reserved BIOS-e820: [mem 0x000000000000ca000-0x000000000000cbffff] reserved ></pre>
show kernel modules	<p>Show the kernel modules loaded for the system supporting the hardware as detected.</p> <p>This command also supports CTRL-C to cancel out of viewing the log file.</p>	<pre>> show kernel modules Module Size Used by nls_utf8 1390 0 ip6v6 336565 27 ppdev 8183 0 zfs 1088908 9 zcommon 44466 1 zfs znvpair 74101 2 zfs,zcommon zavl 6900 1 zfs ></pre>
show kernel parameters	<p>Show the configured kernel parameters used to configure kernel runtime settings</p> <p>This command also supports CTRL-C to cancel out of viewing the log file.</p>	<pre>> show kernel parameters abi.vsyscall32 = 1 debug.exception-trace = 1 debug.kprobes-optimization = 1 dev.cdrom.autoclose = 1 dev.cdrom.autoeject = 0 dev.cdrom.check_media = 0 dev.cdrom.debug = 0 ></pre>
show data shares active	<p>Show all currently configured Samba share's the MyNAS appliance is serving</p>	<pre>> show samba active shares SHARE NAME SHARE COMMENT \\MYTESTSVR\archive_for_iscsi_lun2 iSCSI Archive for lun2 ></pre>

Command Name	Command Description	Command Example
show data shares available	Show all available Samba shares configured, but not currently shared / active	<pre>> show samba available shares SHARE NAME SHARE COMMENT archive_for_iscsi_lun3 iSCSI Archive for lun3 backup_for_iscsi_lun4 iSCSI Backup for lun4 ></pre>
show data shares status	Show the current status of Samba on the MyNAS appliance.	<pre>> show samba status Samba version 4.2.4 PID Username Group Machine Protocol Version ----- Service pid machine Connected at ----- No locked files ></pre>
show service status apcupsd	Show the status of the UPS Monitoring service	<pre>> show service status apcupsd apcupsd (pid 14413) is running... ></pre>
show service status crond	Show the status of the crond service	<pre>> show service status crond crond (pid 4875) is running... ></pre>
show service status dropbox	Show the status of the dropbox service	<pre>> show service status dropbox dropboxd for USER dropbox: not running. ></pre>
show service status httpd	Show the status of the httpd service	<pre>> show service status httpd httpd (pid 4018) is running... ></pre>
show service status iptables	Show the status of the iptables service	<pre>> show service status iptables iptables: Firewall is not running. ></pre>
show service status mdmonitor	Show the status of the mdmonitor service	<pre>> show service status mdmonitor mdmonitor (pid 1306) is running... ></pre>
show service status minidlina	Show the status of the minidlina service	<pre>> show service status minidlina minidlina is stopped ></pre>
show service status mysqld	Show the status of the mysqld service	<pre>> show service status mysqld mysqld (pid 1856) is running... ></pre>
show service status netfs	Show the status of the netfs service	<pre>> show service status netfs ></pre>
show service status nfslock	Show the status of the nfslock service	<pre>> show service status nfslock rpc.statd is stopped ></pre>

Command Name	Command Description	Command Example
<code>show service status network</code>	Show the status of the network service	<pre>> show service status network Configured devices: lo eth0 Currently active devices: lo eth0 ></pre>
<code>show service status nfs</code>	Show the status of the nfs service	<pre>> show service status nfs rpc.svcgssd is stopped rpc.mountd is stopped nfsd is stopped ></pre>
<code>show service status nfslock</code>	Show the status of the nfslock service	<pre>> show service status nfslock rpc.statd is stopped ></pre>
<code>show service status nmb</code>	Show the status of the nmb service	<pre>> show service status nmb nmbd (pid 4036) is running... ></pre>
<code>show service status ntpd</code>	Show the status of the ntpd service	<pre>> show service status ntpd ntpd (pid 3508) is running... ></pre>
<code>show service status postfix</code>	Show the status of the postfix service	<pre>> show service status postfix master (pid 4008) is running... ></pre>
<code>show service status rsyslog</code>	Show the status of the rsyslog service	<pre>> show service status rsyslog rsyslogd (pid 3329) is running... ></pre>
<code>show service status samba</code>	Show the status of the samba service	<pre>> show service status samba smbd (pid 4064 4045) is running... ></pre>
<code>show service status smartd</code>	Show the status of the smartd service	<pre>> show service status smartd smartd is stopped ></pre>
<code>show service status smb</code>	Show the status of the smb service	<pre>> show service status smb smbd (pid 4064 4045) is running... ></pre>
<code>show service status sshd</code>	Show the status of the sshd service	<pre>> show service status sshd openssh-daemon (pid 3500) is running... ></pre>
<code>show service status sysstat</code>	Show the status of the sysstat service	<pre>> show service status sysstat ></pre>
<code>show service status tgt</code>	Show the status of the tgt service	<pre>> show service status tgt tgt (pid 3458 3457) is running... ></pre>
<code>show service status xen-watchdog</code>	Show the status of the xen-watchdog service	<pre>> show service status xen-watchdog ></pre>

Command Name	Command Description	Command Example	
show service status xenconsole	Show the status of the xenconsole service	> show service status xenconsole >	
show service status xend	Show the status of the xend service	> show service status xend >	
show service status xendomains	Show the status of the xendomains service	> show service status xendomains >	
show service status xenstored	Show the status of the xenstored service	> show service status xenstored >	
show service status zfs	Show the status of the zfs service	> show service status zfs no pools available no datasets available >	
show system datetime	Show the current system date and time	> show system datetime Tue May 28 10:53:27 EST 2013 >	
show system disk-health	Show the physical disk health as reported by smartctl	> show system disk-health enable# show system disk-health Disk Serial Number Smart Status =====	/dev/sda No Serial Number SMART Health Status: OK /dev/sdb No Serial Number SMART Health Status: OK /dev/sdc No Serial Number SMART Health Status: OK /dev/sdd No Serial Number SMART Health Status: OK enable# >
		> show system disk-health Disk Serial Number Smart Status =====	/dev/sda 5VJ755CJ SMART overall-health self-assessment test result: PASSED /dev/sdb W627CR0W SMART overall-health self-assessment test result: PASSED /dev/sdc 9QJ4EW5X SMART overall-health self-assessment test result: PASSED /dev/sdd 9QJ4F71T SMART overall-health self-assessment test result: PASSED >
show system hostname	Show the current configured hostname	> show system hostname mytestsvr.network.zzz >	

Command Name	Command Description	Command Example
show system iostat		<pre>> show system iostat Linux 3.7.10-6.el6.x86_64 (mytestsvr.network.zzz) 05/28/2013 _x86_64_ (1 CPU) avg-cpu: %user %nice %system %iowait %steal %idle 0.68 0.00 0.97 0.22 0.00 98.14 Device: tps Blk_read/s Blk_wrtn/s Blk_read Blk_wrtn sdc 0.35 19.18 9.62 674832 338392 sdb 0.52 1.29 2.33 45251 81844 sda 0.64 6.27 2.33 220789 81844 sdd 0.34 18.78 9.62 660784 338600 sde 0.34 17.77 9.63 625304 338832 sdf 0.33 16.66 9.65 586104 339624 sdg 0.34 18.14 9.63 638232 338960 sdh 0.01 0.08 0.00 2896 0 sdi 0.01 0.08 0.00 2896 0 sdj 0.01 0.08 0.00 2896 0 sdk 0.01 0.08 0.00 2896 0 sdl 0.01 0.08 0.00 2896 0 md0 0.01 0.10 0.00 3600 0 md2 0.38 7.24 1.87 254796 65936 md1 0.01 0.10 0.00 3412 18 zd0 0.17 31.08 16.27 1093696 572400 ></pre>
show system ip address	Show the current system configured IP addresses	<pre>> show system ip addresses 1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00 inet 127.0.0.1/8 scope host lo inet6 ::1/128 scope host valid_lft forever preferred_lft forever 2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000 link/ether 00:0c:29:92:7a:ae brd ff:ff:ff:ff:ff:ff inet 192.168.153.128/24 brd 192.168.153.255 scope global eth0 inet6 fe80::20c:29ff:fe92:7aae/64 scope link valid_lft forever preferred_lft forever ></pre>
show system ip route	Show the current system IP routing information	<pre>> show system ip route Kernel IP routing table Destination Gateway Genmask Flags Metric Ref Use Iface 0.0.0.0 192.168.153.2 0.0.0.0 UG 0 0 0 eth0 192.168.153.0 0.0.0.0 255.255.255.0 U 0 0 0 eth0 ></pre>

Command Name	Command Description	Command Example
show system memory	Show the current system memory utilisation	<pre>> show system memory total used free shared buffers cached Mem: 996 695 301 0 191 50 Low: 996 695 301 High: 0 0 0 -/+ buffers/cache: 452 543 Swap: 4094 0 4094 ></pre>
show system memory statistics	Show the current system memory statistics	<pre>> show system memory statistics procs -----memory----- --swap-- -----io----- --system-- -----cpu----- r b swpd free inact active si so bi bo in cs us sy id wa st 0 0 0 301 284 47 0 0 80 33 33 76 1 1 98 0 0 ></pre>
show system memory table	Show the current system memory table	<pre>> show system memory table 996 M total memory 695 M used memory 47 M active memory 284 M inactive memory 301 M free memory 191 M buffer memory 50 M swap cache 4094 M total swap 0 M used swap 4094 M free swap 23935 non-nice user cpu ticks 4 nice user cpu ticks 32543 system cpu ticks 3490275 idle cpu ticks 7585 IO-wait cpu ticks 9 IRQ cpu ticks 1502 softirq cpu ticks 0 stolen cpu ticks 2822208 pages paged in 1182707 pages paged out 0 pages swapped in 0 pages swapped out 1163367 interrupts 2717662 CPU context switches 1369612356 boot time 7151 forks ></pre>
show system nethogs	Show network traffic and their processes	<pre>11690 root sshd: root@pts/0 eth0 1.018 0.117 KB/sec ? root unknown TCP 0.000 0.000 KB/sec</pre>

Command Name	Command Description	Command Example
show system network connections	Show all the current active connections to the MyNAS appliance	<pre>> show system network connections Active Internet connections (servers and established) Proto Recv-Q Send-Q Local Address Foreign Address State PID/Program tcp 0 0 0.0.0.0:445 0.0.0.0:* LISTEN 4045/smbd tcp 0 0 127.0.0.1:3306 0.0.0.0:* LISTEN 3875/mysqld tcp 0 0 0.0.0.0:139 0.0.0.0:* LISTEN 4045/smbd tcp 0 0 0.0.0.0:22 0.0.0.0:* LISTEN 3500/sshd tcp 0 0 127.0.0.1:25 0.0.0.0:* LISTEN 4008/master tcp 0 0 0.0.0.0:3260 0.0.0.0:* LISTEN 3457/tgtd tcp 0 0 192.168.153.128:3260 192.168.153.1:44793 ESTABLISHED 3457/tgtd tcp 0 0 192.168.153.128:22 192.168.153.1:45336 ESTABLISHED 6467/sshd tcp 0 0 :::445 :::* LISTEN 4045/smbd tcp 0 0 :::139 :::* LISTEN 4045/smbd tcp 0 0 :::80 :::* LISTEN 4018/httpd tcp 0 0 :::22 :::* LISTEN 3500/sshd tcp 0 0 :::1:25 :::* LISTEN 4008/master tcp 0 0 :::3260 :::* LISTEN 3457/tgtd ></pre>
show system network dns	Show the configured network DNS servers	<pre>> show system network dns nameserver 8.8.8.8 nameserver 8.8.4.4 ></pre>
show system network interface <interface-name>	Show the details of a particular network interface. The <id> input takes valid entries such as: <ul style="list-style-type: none"> eth0 ethX lo bon0 	<pre>> show system network interface eth0 eth0 Link encap:Ethernet HWaddr 00:0C:29:92:7A:AE inet addr:192.168.153.128 Bcast:192.168.153.255 Mask:255.255.255.0 inet6 addr: fe80::20c:29ff:fe92:7aae/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:210181 errors:0 dropped:0 overruns:0 frame:0 TX packets:12608 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:306156784 (291.9 MiB) TX bytes:2872442 (2.7 MiB) ></pre>
show system network interfaces	Show all the network interfaces as configured in the MyNAS appliance	<pre>> show system network interfaces 1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00 2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000 link/ether 00:0c:29:92:7a:ae brd ff:ff:ff:ff:ff:ff ></pre>
show system notifications address	Show the current configured system notification address used for sending administrative information about the MyNAS appliance	<pre>> show system notifications address No email address configured. Set notification email address using the command: configure system notifications <email-address> ></pre>

Command Name	Command Description	Command Example
show system notifications smarthost	Show the current configured smart host address used for sending administrative information about the MyNAS appliance	> show system notifications smarthost System notifications smarthost: mail.myisp.net >
show system ntp servers	Show the current configured system NTP servers for the MyNAS appliance	> show system ntp servers server 0.centos.pool.ntp.org server 1.centos.pool.ntp.org server 2.centos.pool.ntp.org >
show system ntp time-sync	Show the current configured system NTP time synchronisation for the MyNAS appliance	> show system ntp time-sync remote refid st t when poll reach delay offset jitter =====
		+128.184.34.53 169.254.0.1 4 u 382 512 137 8.706 -102.33 124.901
		+121.0.0.42 216.218.254.202 2 u 383 512 377 31.243 14.980 3.193
		*27.54.95.11 218.100.43.70 2 u 485 512 377 44.712 1.241 3.723
		>
show system timezone	Show the current configured timezone of the MyNAS appliance	> show system timezone Timezone: Australia/Melbourne >
show system updates	Show any available system updates for the MyNAS appliance	> show system updates There are no MyNAS Storage Appliance Updates at this time > > show system updates logrotate.x86_64 3.7.8-17.el6 MyNAS >
show system uptime	Show the current system uptime of the MyNAS appliance	> show system uptime 11:16:04 up 1 day, 1:23, 1 user, load average: 0.00, 0.02, 0.05 >
show system utilisation	Show the current CPU utilisation of the MyNAS appliance	> show system utilisation 11:17:23 AM CPU %usr %nice %sys %iowait %irq %soft %steal %guest %idle 11:17:23 AM all 0.66 0.00 0.90 0.21 0.00 0.04 0.00 0.00 98.20 >
show system version	Show the current system version of the MyNAS appliance	> show system version Operating System: MyNAS Release 1.3 (Yarra) Kernel Version: 3.14.56-2.el6.x86_64 >

Command Name	Command Description	Command Example
show vdev	Show the configured vdev devices utilised by the MyNAS appliance to configure the ZFS Pool's	<pre>> show vdev alias disk_sdc wwn-0x6000c298be3a741f805e2c0843b2e548 alias disk_sdd wwn-0x6000c29fcbd828ea810778318a8dd247 alias disk_sde wwn-0x6000c2995cc9aa650588297ab44f2be9 alias disk_sdf wwn-0x6000c292f764b6427ca3e17973318677 alias disk_sdg wwn-0x6000c2978f7e068647848bc176bccc alias disk_sdh wwn-0x6000c29d561fc7b5a50b41ae1b846170 alias disk_sdi wwn-0x6000c295d8a746f37a9f6f8bed988644 alias disk_sdj wwn-0x6000c2910e99bbec43a9bed1dd30b582 alias disk_sdk wwn-0x6000c2966c471b06f1bb0f37140b28d8 alias disk_sdl wwn-0x6000c29494719c5ea43aa0aba5256b79 ></pre>
show zfs arcstats	Show the ZFS arcstats details	<pre>> show zfs arcstats 4 1 0x01 80 3840 58658632981 295322500527220 name type data hits 4 328135 misses 4 25230 demand_data_hits 4 11225 demand_data_misses 4 291 demand_metadata_hits 4 291355 demand_metadata_misses 4 758 prefetch_data_hits 4 25152 ></pre>
show zfs vdev_cache_stats	Show the ZFS arcstats details	<pre>> show zfs vdev_cache_stats name type data delegations 4 0 hits 4 0 misses 4 0 ></pre>
show zfs zfetchstats	Show the ZFS zfetchstats details	<pre>> show zfs zfetchstats name type data hits 4 364441 misses 4 496 colinear_hits 4 18 colinear_misses 4 478 stride_hits 4 356099 stride_misses 4 5 reclaim_successes 4 201 reclaim_failures 4 277 streams_resets 4 82 streams_noresets 4 8342 bogus_streams 4 0 ></pre>

Command Name	Command Description	Command Example
show zfs zilstats	Show the ZFS zilstats details	<pre>> show zfs zilstats name type data zil_commit_count 4 167 zil_commit_writer_count 4 167 zil_itx_count 4 3981 zil_itx_indirect_count 4 3334 zil_itx_indirect_bytes 4 218497024 zil_itx_copied_count 4 0 zil_itx_copied_bytes 4 0 zil_itx_needcopy_count 4 647 zil_itx_needcopy_bytes 4 43494672 zil_itx metaslab_normal_count 4 0 zil_itx metaslab_normal_bytes 4 0 zil_itx metaslab_slog_count 4 548 zil_itx metaslab_slog_bytes 4 44359856 ></pre>
show zfs volumes	Show all the configured ZFS Volumes as configured on the MyNAS appliance	<pre>> show zfs volumes NAME USED AVAIL REFER MOUNTPOINT green 1.56G 156G 256K /green green/archive 462M 156G 256K /green/archive green/archive/iscsi_lun1_20130523100322 116M 156G 116M /green/archive/iscsi_lun1_20130523100322 green/archive/iscsi_lun2_20130523102105 116M 156G 116M /green/archive/iscsi_lun2_20130523102105 green/archive/iscsi_lun3_20130524114205 229M 156G 229M /green/archive/iscsi_lun3_20130524114205 green/backup 513M 156G 230K /green/backup green/backup/iscsi_lun4 513M 156G 513M /green/backup/iscsi_lun4 green/iscsi 618M 156G 217K /green/iscsi green/iscsi/lun4 618M 156G 618M - ></pre>
show zpool iostat	Show the performance of the configured zpool	<pre>> show zpool iostat capacity operations bandwidth pool alloc free read write read write ----- green 984M 198G 0 0 17.0K 6.09K raidz1 984M 198G 0 0 17.0K 6.09K disk_sdc - - 0 0 3.65K 1.84K disk_sdd - - 0 0 3.58K 1.84K disk_sde - - 0 0 3.38K 1.85K disk_sdf - - 0 0 3.17K 1.85K disk_sdg - - 0 0 3.45K 1.85K ----- ></pre>
show zpool list	Show all the configured ZFS zpool's within the MyNAS appliance	<pre>> show zpool list NAME SIZE ALLOC FREE CAP DEDUP HEALTH ALTROOT green 199G 984M 198G 0% 6.12x ONLINE - ></pre>

Command Name	Command Description	Command Example
show zpool status	Show the status of all configured zpools within the MyNAS appliance	<pre>> show zpool status pool: green state: ONLINE scan: none requested config: NAME STATE READ WRITE CKSUM green ONLINE 0 0 0 raidz1-0 ONLINE 0 0 0 disk_sdc ONLINE 0 0 0 disk_sdd ONLINE 0 0 0 disk_sde ONLINE 0 0 0 disk_sdf ONLINE 0 0 0 disk_sdg ONLINE 0 0 0 errors: No known data errors ></pre>

MyNAS Enable User Command Line Interface (CLI) Reference

The previous 'admin' role CLI reference essentially provides a read only "configuration" access to the MyNAS Storage Appliance. This privilege level is not root or super user access.

At the enable privilege access level, the following commands are available which allow limited configuration of the MyNAS Storage Appliance:

```
enable#
configure  Configure MyNAS System Functionality
exit       Exit MyNAS CLI privileged execution mode
poweroff   Poweroff MyNAS
reboot     Reboot MyNAS
show       Show MyNAS current system information
test       Test MyNAS Configuration
update     Update MyNAS
whoami     Display current user name
zpool      ZFS Pool Configuration Commands

enable#
```

The below list of commands provides the details of what can be configured using the CLI at this privilege level. All "admin" level commands are also inherited to the "enable" user.

Command Name	Command Description	Command Example
configure network interface dhcp <ifname>	Configure the selected network interface to use DHCP for network settings	enable# configure network interface dhcp eth0 Reconfiguring the network, please wait .. enable#
configure network interface static <ifname> <ip-address> <subnet-mask> <gateway>	Configure the selected network interface to use a static setting for network settings	enable# configure network interface static eth0 192.168.153.128 255.255.255.0 192.168.153.2 Reconfiguring the network, please wait .. Configure DNS for this system using the command: configure network dns enable#

Command Name	Command Description	Command Example
configure system notifications email <your-email-address>	Configure the email address where system notifications will be sent to notify you of system events	enable# configure system notifications email myemail@mydomain.net enable#
configure system notifications smarthost <your-email-address>	Configure the ISP smarthost which will be used to send notification messages through	enable# configure system notifications smarthost mail.myisp.net Configured email smarthost as: mail.myisp.net enable#
configure system notifications sender-address <your-email-address>		
configure system raid offline <disk-name>	Offline a system RAID disk in order to replace it For further usage instructions refer to Appendix B	Refer to Appendix B
configure system raid offline <disk-name>	Online a system RAID disk in order to replace it For further usage instructions refer to Appendix B	Refer to Appendix B
exit	Exit the "enable" configuration mode	enable# exit Exiting MyNAS CLI privileged execution mode... >
poweroff	Poweroff the MyNAS Storage Appliance	enable# poweroff Are you sure you wish to poweroff the system ? y enable# Broadcast message from root@myhostname.mynetwork.net (/dev/pts/1) at 7:43 ... The system is going down for power off NOW!

Command Name	Command Description	Command Example
reboot	Reboot the MyNAS Storage Appliance	<pre>enable# reboot Are you sure you wish to reboot the system ? y enable# Broadcast message from root@myhostname.mynetwork.net (/dev/pts/0) at 7:47 ... The system is going down for reboot NOW!</pre>
show system crontab	Show the system crontab details, showing when system jobs on your MyNAS appliance will run	<pre>enable# show system crontab # Example of job definition: # .----- minute (0 - 59) # .----- hour (0 - 23) # .----- day of month (1 - 31) # .----- month (1 - 12) OR jan,feb,mar,apr ... # .----- day of week (0 - 6) (Sunday=0 or 7) OR sun,mon,tue,wed,thu,fri,sat # # * * * * * user-name command to be executed */5 * * * * root /etc/scripts/zpadmin.pl 0 0 * * 0 root /etc/scripts/zpadmin.pl -scrub enable#</pre>
update system	Update the MyNAS Storage Appliance with any updates which may be applicable Note: This command is depreciated via WebUI functionality	<pre>enable# update system Please use the MyNAS WebUI to update MyNAS. enable#</pre>
zpool export <zfs-pool-name>	Export a ZFS Pool	<pre>enable# zpool export storage0 Are you sure you wish to export the ZFS Pool 'storage0' ? y enable#</pre>

Command Name	Command Description	Command Example
zpool import <zfs-pool-name>	Import a ZFS Pool	<pre>enable# zpool import storage0 Are you sure you wish to import the ZFS Pool 'storage0' ? y Attempting to import ... pool: storage0 state: ONLINE scan: none requested config: NAME STATE READ WRITE CKSUM storage0 ONLINE 0 0 0 mirror-0 ONLINE 0 0 0 disk_sdc ONLINE 0 0 0 disk_sdd ONLINE 0 0 0 errors: No known data errors enable#</pre>
zpool offline <zfs-pool-name> <vdev-name>	<p>Offline a storage disk to manually replace the disk</p> <p>For further usage instructions refer to Appendix A</p>	Refer to Appendix A
zpool online <zfs-pool-name> <vdev-name>	<p>Offline a storage disk to manually replace the disk</p> <p>For further usage instructions refer to Appendix A</p>	Refer to Appendix A

Appendix A - Replacing a storage disk in MyNAS Storage Appliance

In the event that a storage disk in MyNAS experiences a failure, use the following procedure to replace the disk in the system. For the example below, the following alerts were generated by MyNAS:

```
This message was generated by the smartd daemon running on:

  host name:  mynas
  DNS domain: homenet.net

The following warning/error was logged by the smartd daemon:

Device: /dev/sde [SAT], ATA error count increased from 0 to 174

Device info:
WDC WD40EFRX-68WT0N0, S/N:WD-WCC4E0622969, WWN:5-0014ee-25ee01af0, FW:80.00A80, 4.00 TB

For details see host's SYSLOG.

You can also use the smartctl utility for further investigation.
No additional messages about this problem will be sent.
```

```
pool: storage
state: DEGRADED
status: One or more devices are faulted in response to persistent errors.
        Sufficient replicas exist for the pool to continue functioning in a
        degraded state.
action: Replace the faulted device, or use 'zpool clear' to mark the device
        repaired.
scan: scrub repaired 0 in 7h55m with 0 errors on Sun Jun 22 09:55:58 2014
config:

    NAME                STATE          READ  WRITE CKSUM
    storage0             DEGRADED       0      0     0
      raidz1-0           DEGRADED       0      0     0
        disk_sdc         ONLINE        0      0     0
        disk_sdd         ONLINE        0      0     0
        disk_sde         FAULTED        0    162     0  too many errors
        disk_sdf         ONLINE        0      0     0

errors: No known data errors
```

Use the following steps to replace a disk (in this case `disk_sde` in the example above) in a ZFS Storage array.

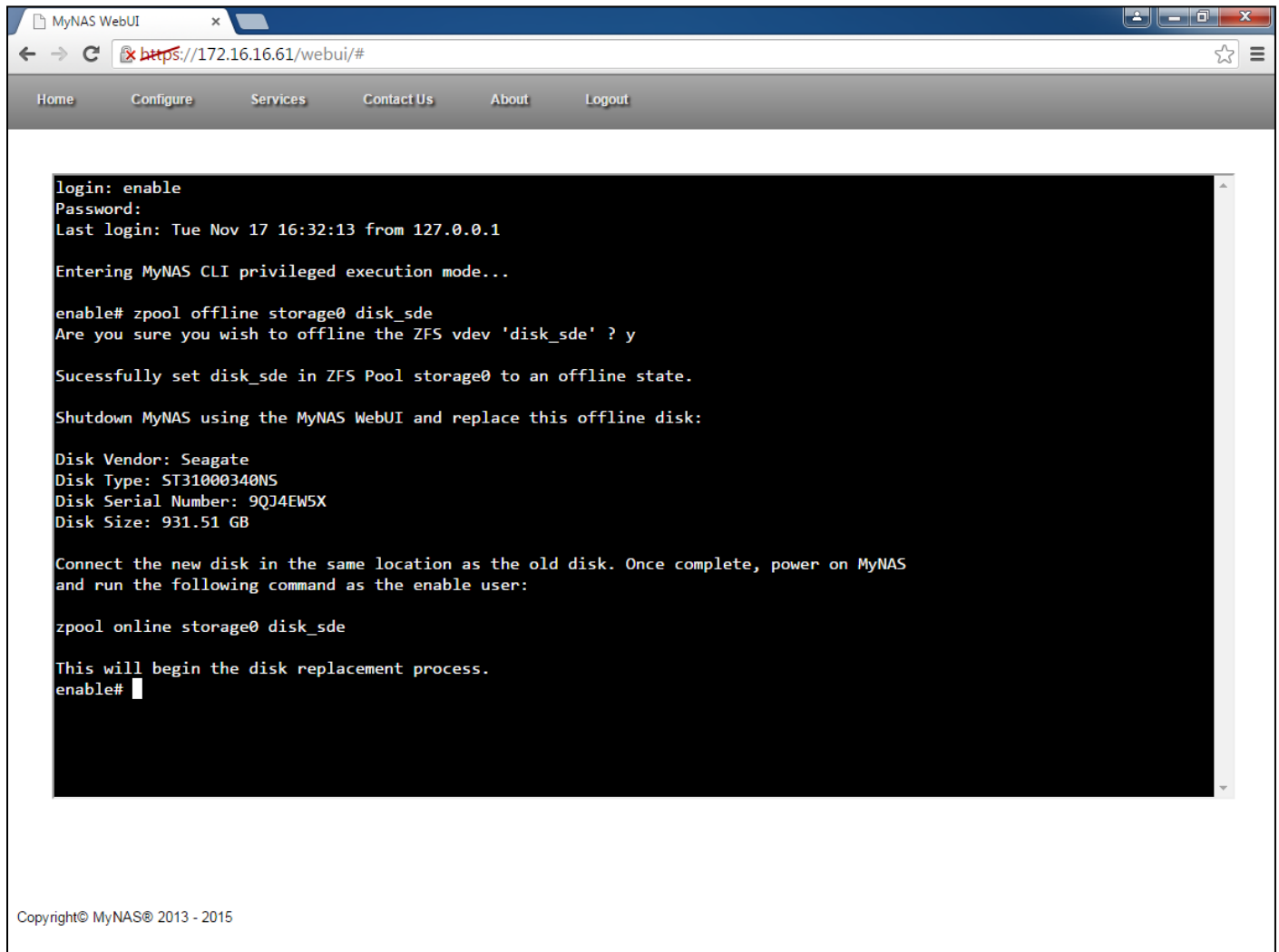
1. Log into the MyNAS CLI via the WebUI as the `enable` user via the WebUI and run the following command:

```
zpool offline <zfs_pool> <disk>
```

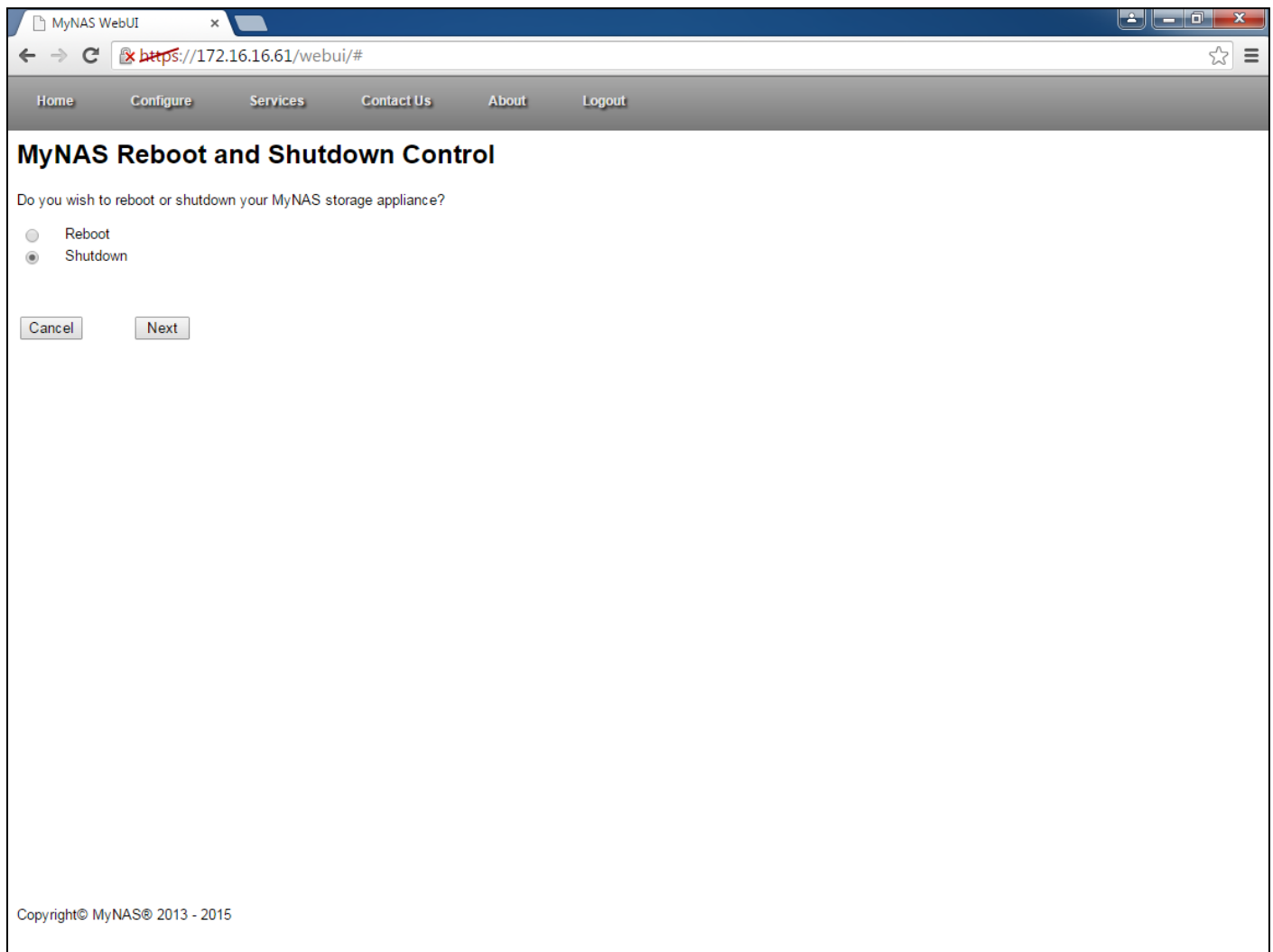
where, `zfs_pool` equals `storage0` and `disk` equals `disk_sde` from the example above

```
zpool offline storage0 disk_sde
```

This will set the bad disk to 'offline' within the ZFS pool. This prepares the MyNAS storage appliance for the disk replacement.



2. Power off your MyNAS Storage Appliance using the WebUI:



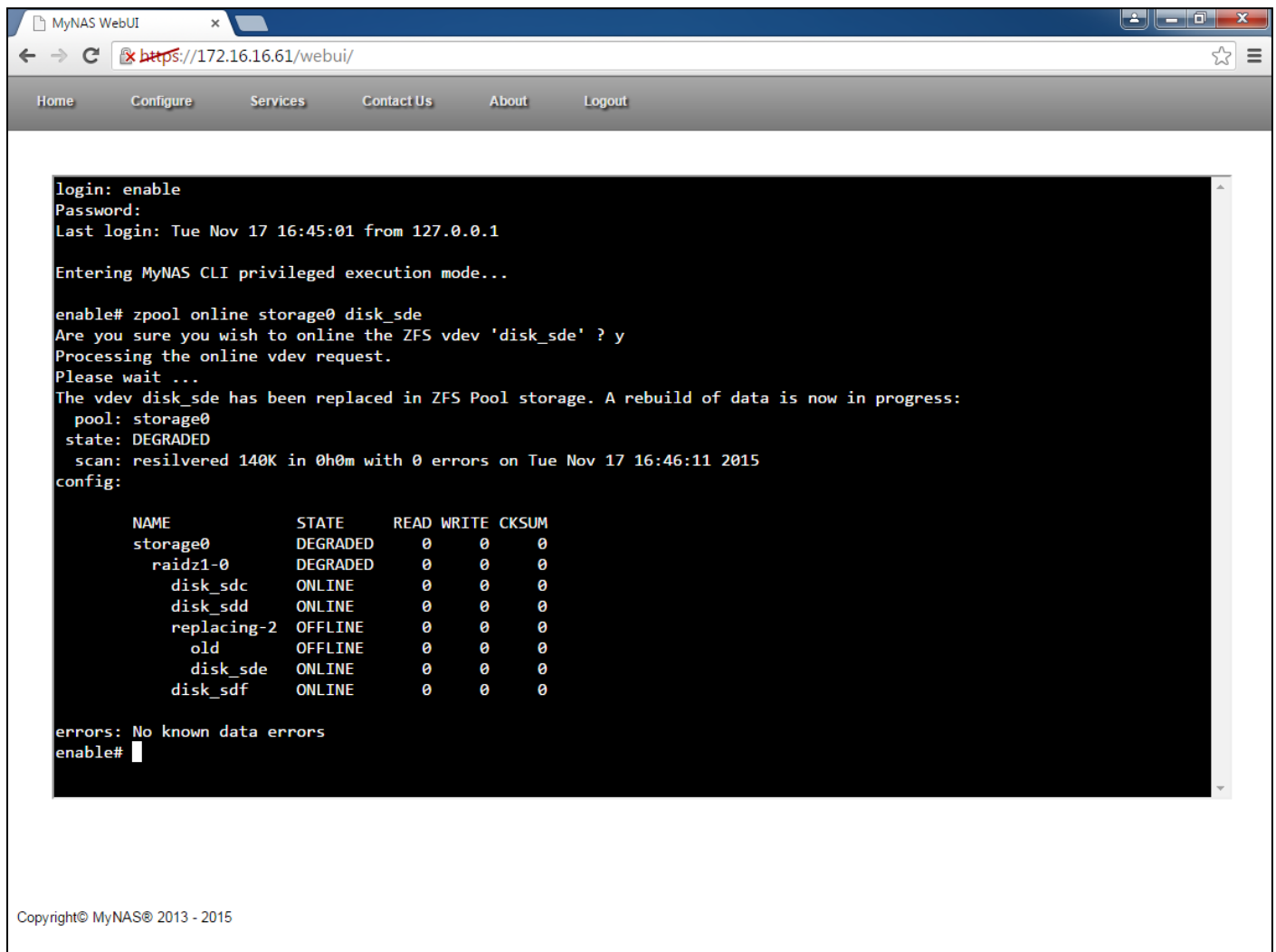
3. Using the email information, identify the drive that requires the replacement. Take the disk out, and replace it with a new disk where either of the following is true:
 - The new disk is an identical replacement
 - The new disk is larger than the disk it is replacing
4. Power on your MyNAS Storage Appliance
5. Log into the MyNAS CLI via the WebUI as the `enable` user and run the following command:

```
zpool online <zfs_pool> <disk>
```

where, `zfs_pool` equals `storage0` and `disk` equals `disk_sde` from the example above

```
zpool online storage0 disk_sde
```

This will set the replaced disk to 'online' within the ZFS pool.



6. The MyNAS storage appliance will now begin to 'resilver' the new drive bringing the ZFS storage pool back to a healthy state.
7. The rebuild time will depend on the quantity of data within the storage pool. To monitor the rebuild process, use the CLI command:

```
show zpool status
```

This will detail the progress of the rebuild

Appendix B - Replacing a disk in MyNAS Storage Appliance RAID Array

In the event that a system disk in MyNAS experiences a failure, use the following procedure to replace the disk in the system. For the example below, the following alert was generated by MyNAS:

```
This is an automatically generated mail message from mdadm
running on mynas. homenet.net

A Fail event had been detected on md device /dev/md1.

It could be related to component device /dev/sdb2.

Faithfully yours, etc.

P.S. The /proc/mdstat file currently contains the following:

Personalities : [raid1]
md1 : active raid1 sdb2[2] (F) sda2[0]
      255936 blocks super 1.0 [2/1] [U_]

md2 : active raid1 sdb3[1] sda3[0]
      12317568 blocks super 1.1 [2/2] [UU]
      bitmap: 1/1 pages [4KB], 65536KB chunk

md0 : active raid1 sdb1[2] sda1[0]
      4192192 blocks super 1.1 [2/2] [UU]

unused devices: <none>
```

Use the following steps to replace a disk (in this case `sdb` in the example above) in the RAID array.

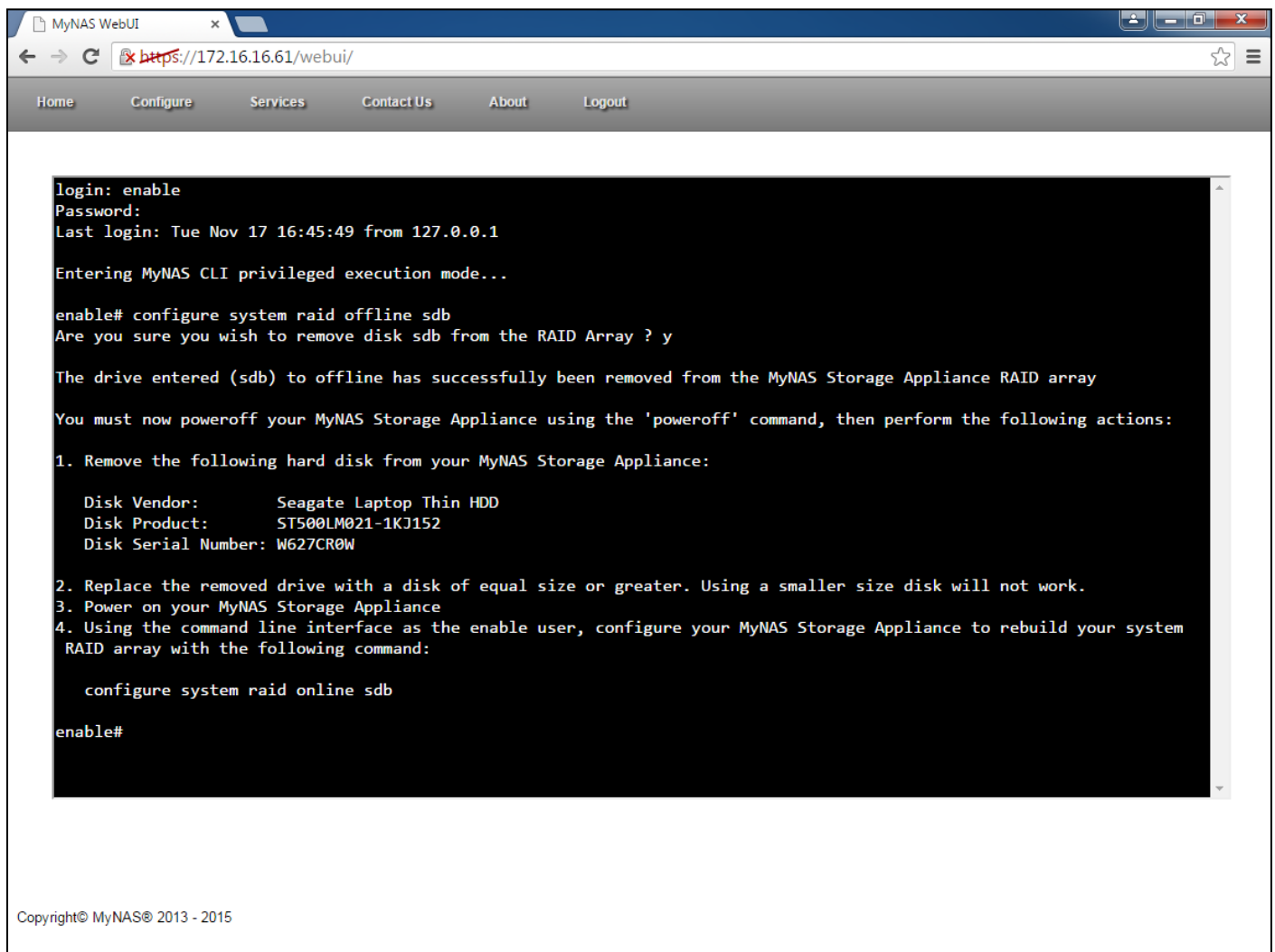
1. Log into the MyNAS CLI via the WebUI as the `enable` user via the WebUI and run the following command:

```
configure system raid offline <disk>
```

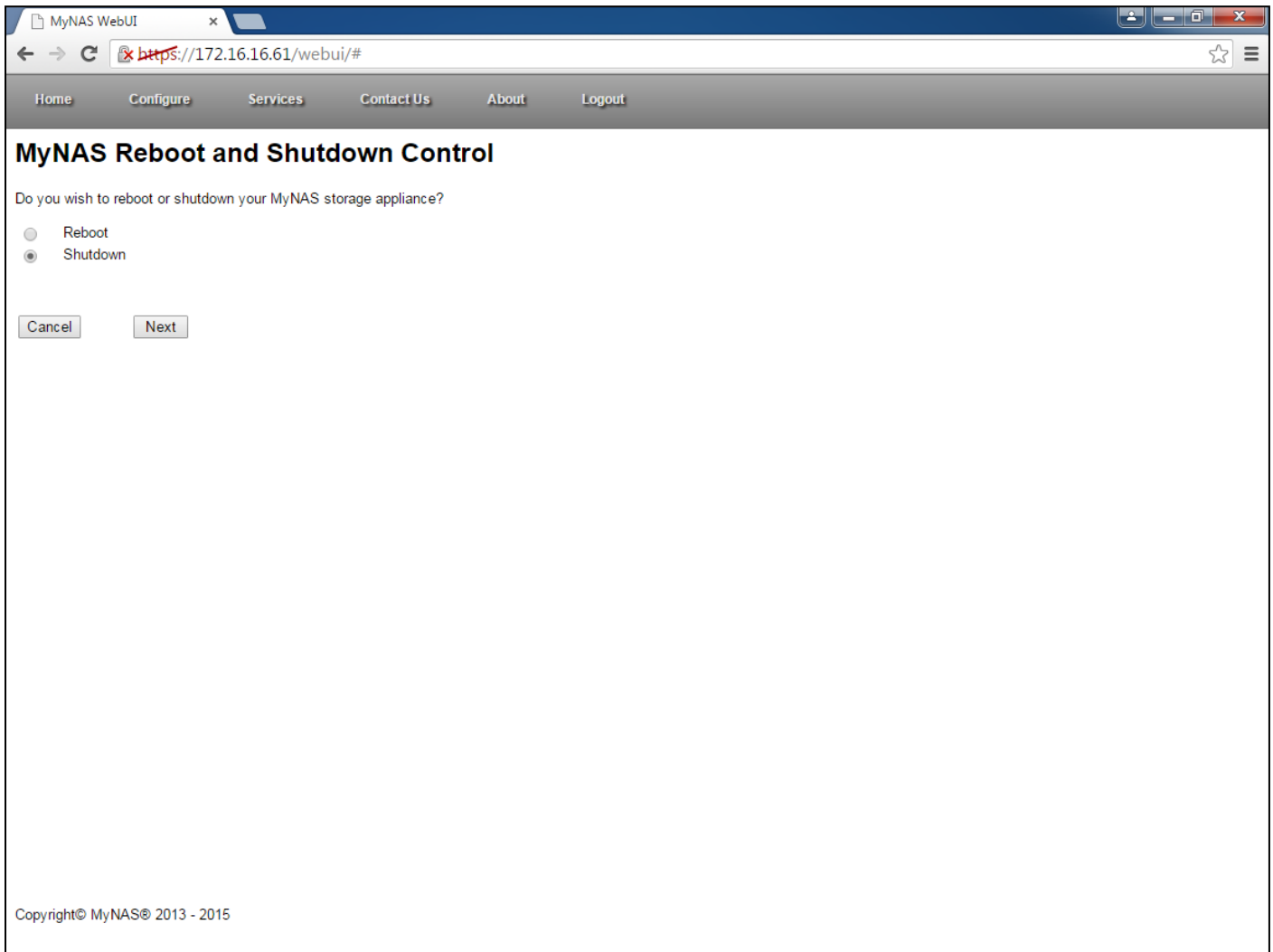
where disk equals `sdb` from the example above

```
configure system raid offline sdb
```

This will set the bad disk to 'offline' within the MyNAS Storage Appliance and prepares the system for the disk replacement.



2. Power off your MyNAS Storage Appliance using the WebUI:



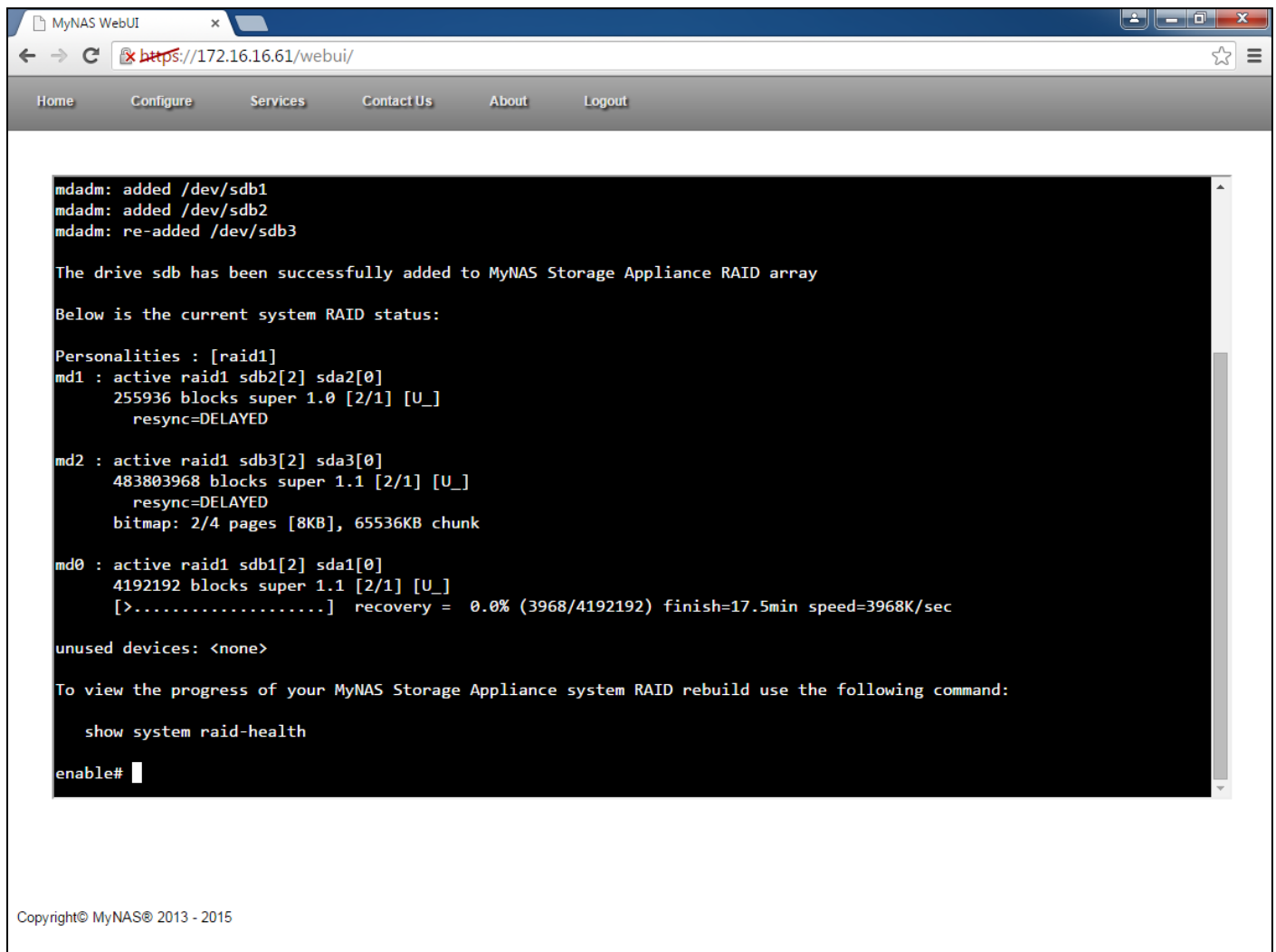
3. Using the email information, identify the drive that requires the replacement. Take the disk out, and replace it with a new disk where either of the following is true:
 - The new disk is an identical replacement
 - The new disk is larger than the disk it is replacing
4. Power on your MyNAS Storage Appliance
5. Log into the MyNAS CLI via the WebUI as the `enable` user and run the following command:

```
configure system raid online <disk>
```

where disk equals `sdb` from the example above

```
configure system raid online sdb
```

This will set the replaced disk to 'online' within the MyNAS Storage Appliance RAID array.



6. The MyNAS Storage Appliance will now begin to rebuild the new drive bringing the system RAID device back to a healthy state.
7. The rebuild time will depend on the quantity of data within the system RAID device. To monitor the rebuild process, use the CLI command:

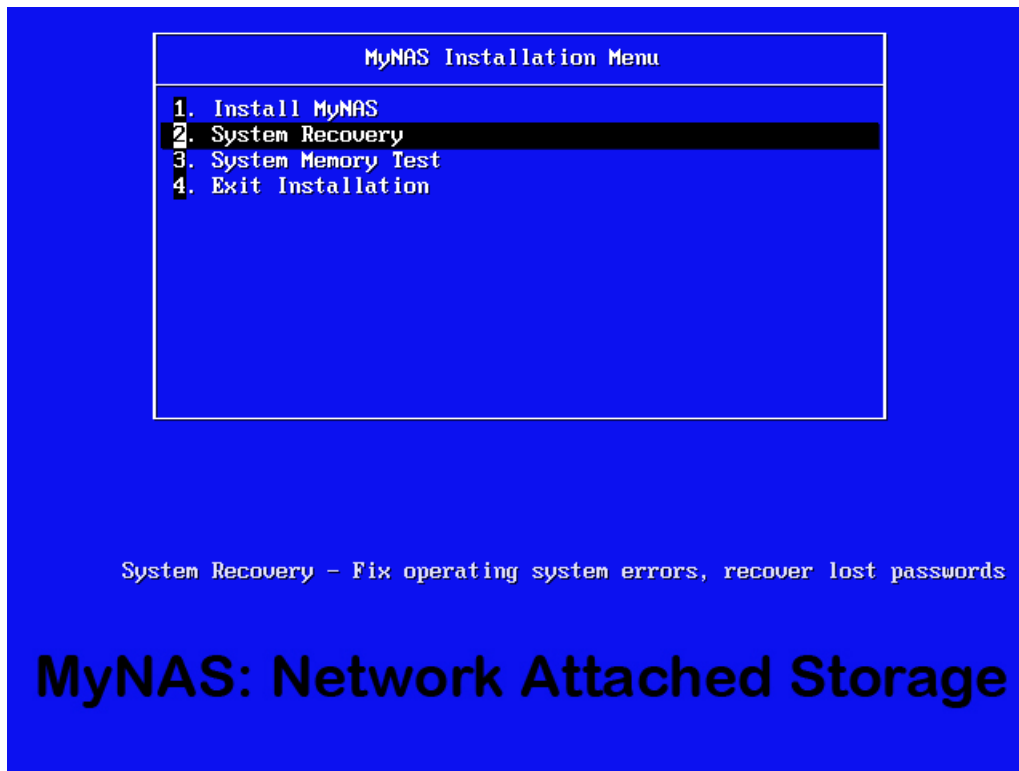
```
show system raid-health
```

This will detail the progress of the rebuild

Appendix C - Performing a system recovery

In the event that MyNAS is experiencing an issue preventing the system from booting, it may be necessary to perform a system recovery to gain access to the system. If this does occur, follow the following procedure to gain access to the root file system to perform any required modifications.

To perform a system recovery, boot the MyNAS ISO as if you were to install the system. From the menu, select option 2 to perform the system recovery:



Once the recovery process has started to load a few items need to be configured.

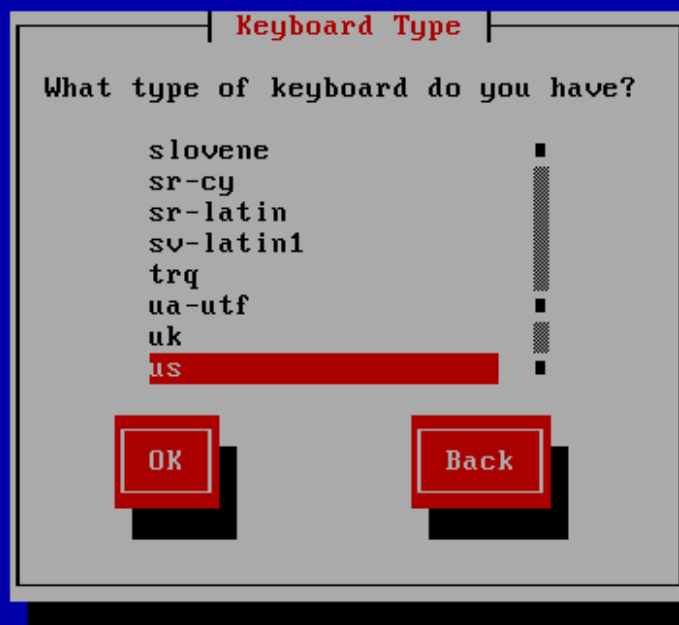
Welcome to MyNAS for x86_64



<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

Select the language for the recovery system. Press OK once selected

Welcome to MyNAS for x86_64 - Rescue Mode



<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

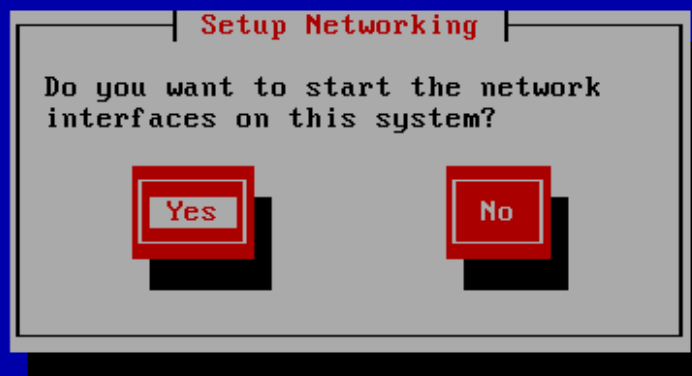
Select the keyboard type. Press OK once selected

Welcome to MyNAS for x86_64 - Rescue Mode



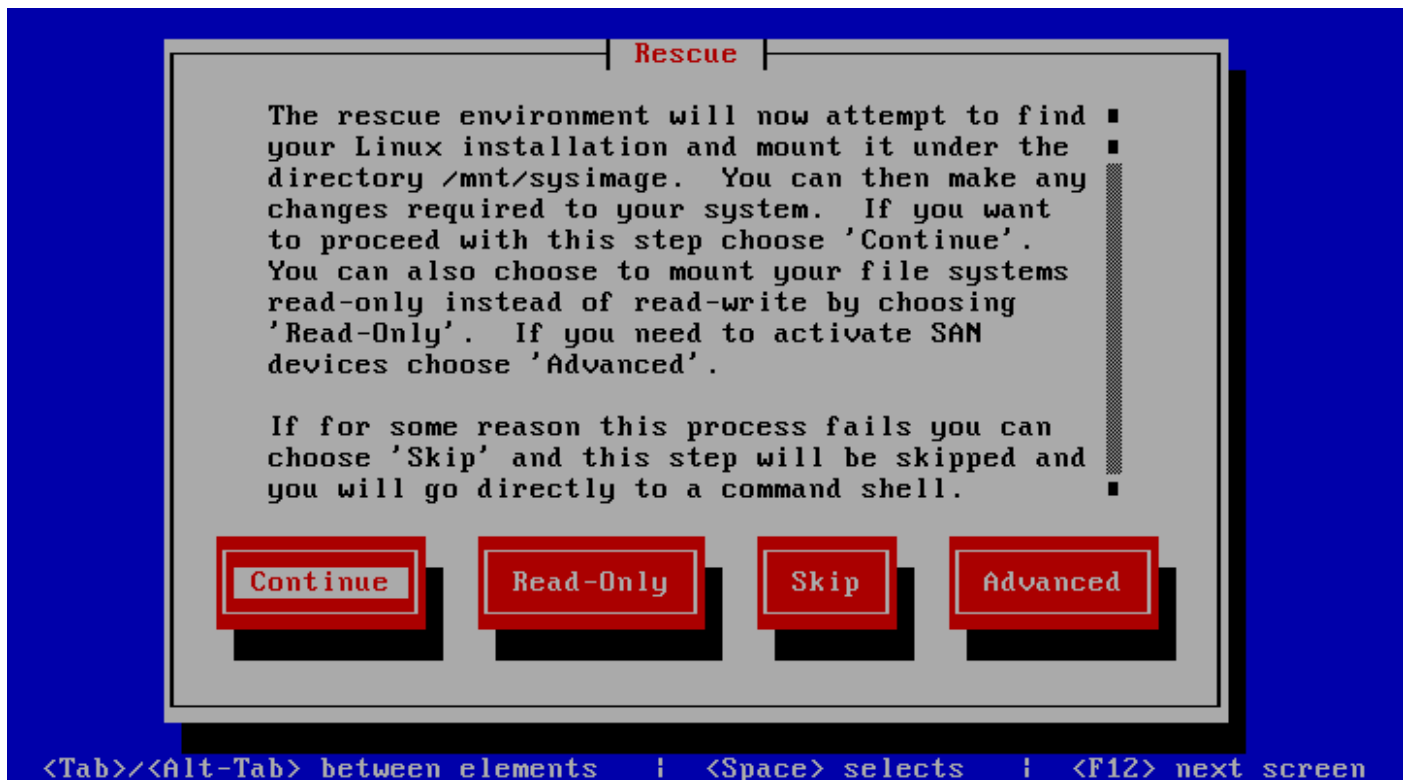
<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

Select the location for the rescue image. In this case it will be the Local CD/DVD as the location. Press OK once selected.



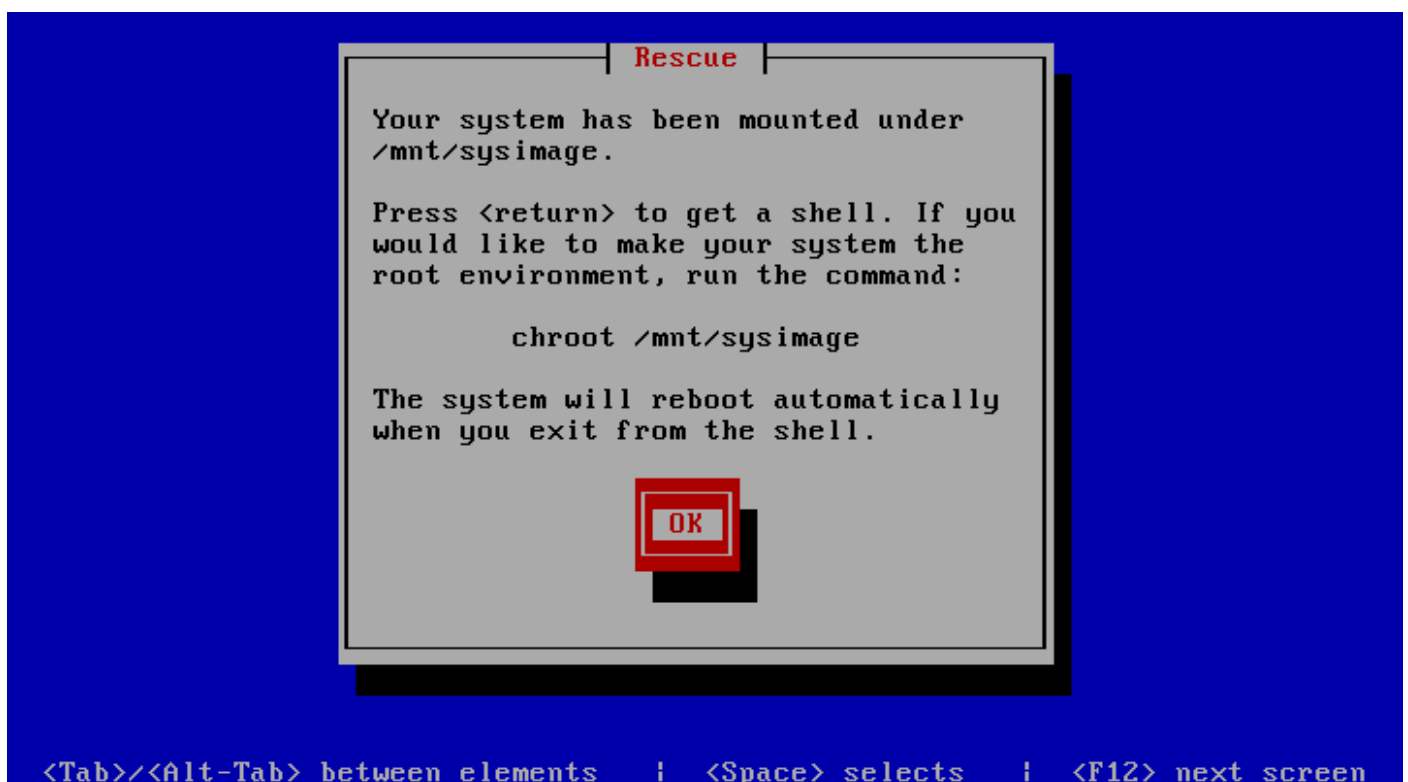
<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

Depending on the type of recovery needed, you may want to start the network interfaces on the system. Follow the prompts to configure the network as required.



Tab through and click the Continue button

Once the system loads the rescue image the following will be displayed

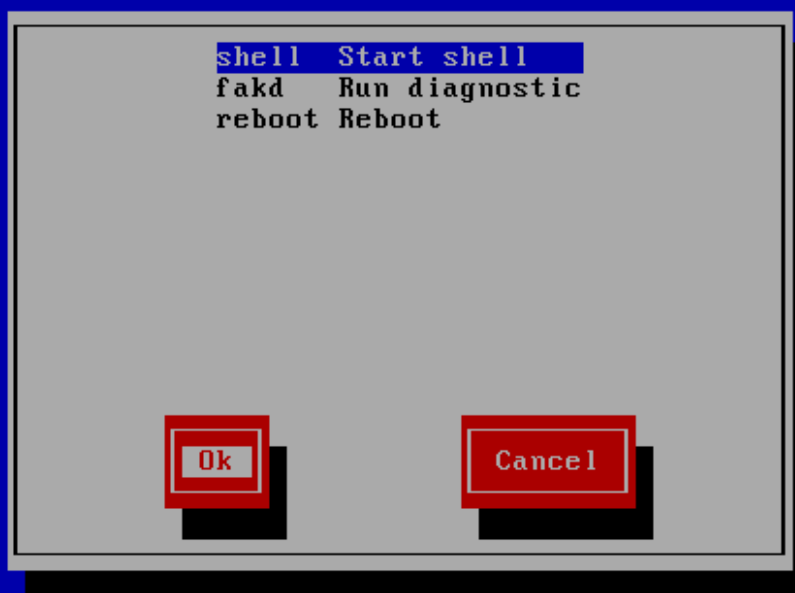


Click OK



<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

Click OK again



Click OK again to start a shell on the system



```
Starting shell...
bash-4.1# chroot /mnt/sysimage/_
```

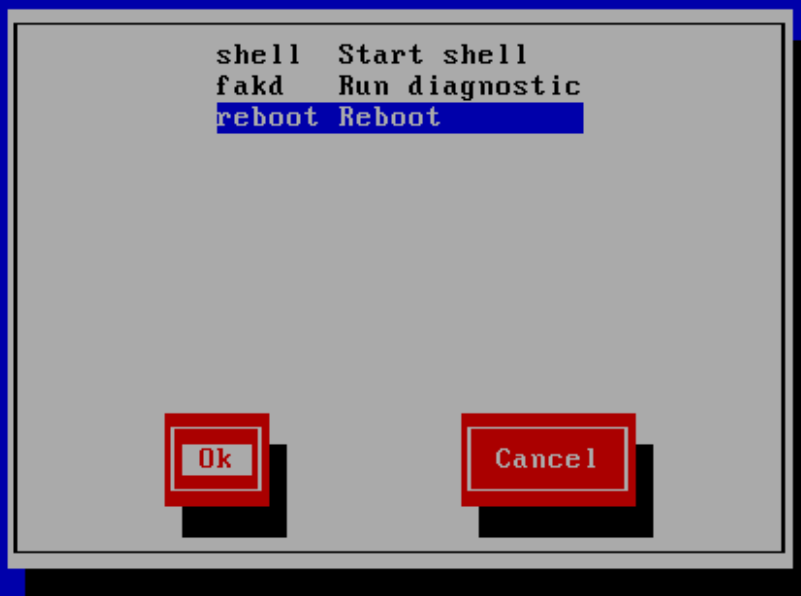
Change to the sysimage root using the command `chroot /mnt/sysimage`

This will change the root to be your MyNAS installation. From here, the ZFS modules can be loaded or system operations can be undertaken to rescue your MyNAS installation

```
sh-4.1# modprobe zfs
sh-4.1# zpool list
NAME      SIZE  ALLOC   FREE   CAP  DEDUP  HEALTH  ALTROOT
storage   -    -        -      -    -      FAULTED  -
sh-4.1# zpool status
  pool: storage
  state: UNAVAIL
status: One or more devices could not be used because the label is missing
        or invalid. There are insufficient replicas for the pool to continue
        functioning.
action: Destroy and re-create the pool from
        a backup source.
       see: http://zfsonlinux.org/msg/ZFS-8000-5E
       scan: none requested
config:

          NAME            STATE          READ  WRITE  CKSUM
storage    UNAVAIL          0     0     0  insufficient replicas
  raidz1-0  UNAVAIL          0     0     0  insufficient replicas
    disk_sdc UNAVAIL          0     0     0
    disk_sdd UNAVAIL          0     0     0
    disk_sde UNAVAIL          0     0     0
    disk_sdf UNAVAIL          0     0     0
    disk_sdg UNAVAIL          0     0     0
sh-4.1# _
```

Once any rescue operations are complete, type `exit` twice. This will take you back to the rescue image configuration.

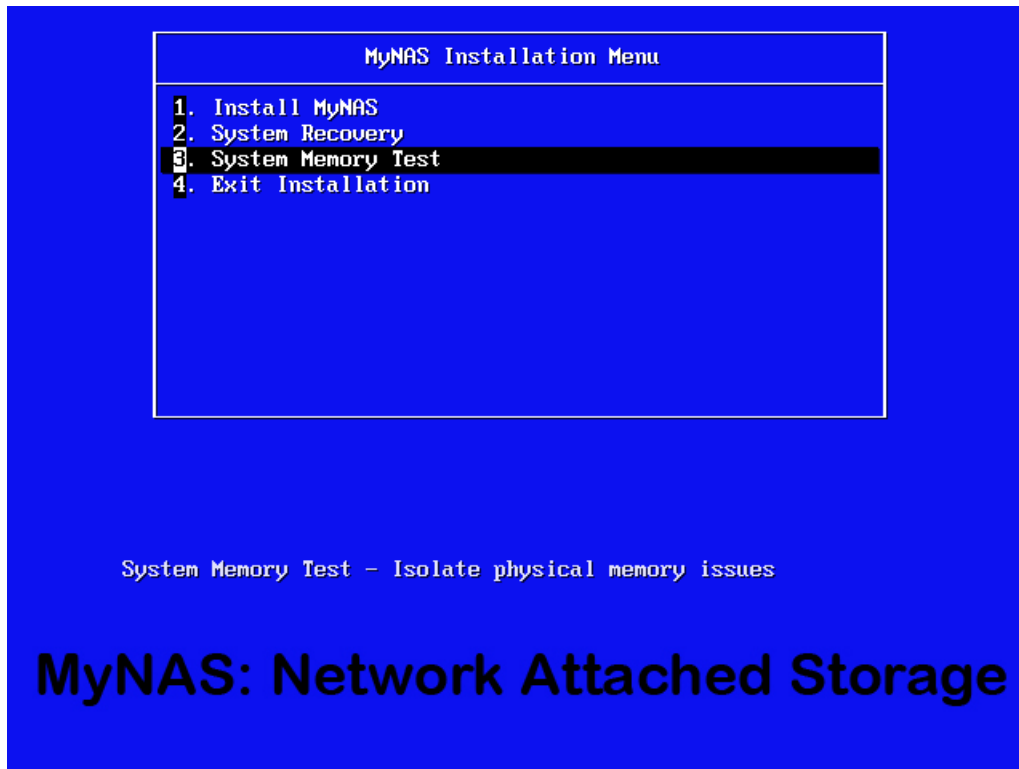


Select reboot and click OK to restart your system.

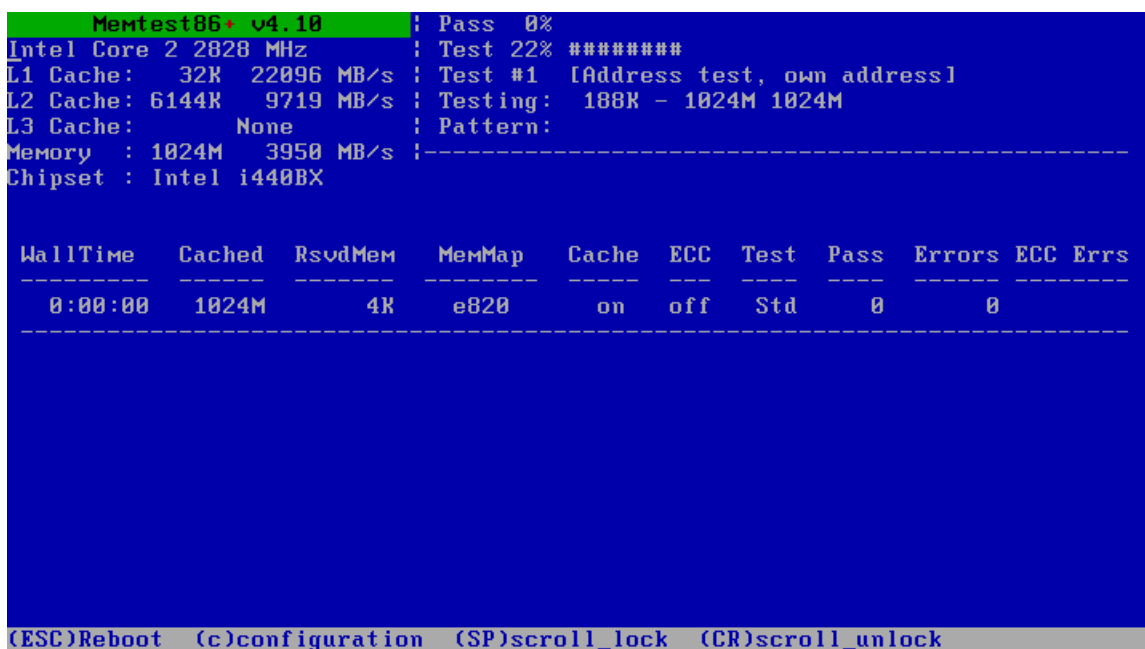
Appendix D - Performing a system memory test

The MyNAS ISO provides the capability to perform a system memory test to help identify if your system has any memory issues. To perform this test, boot the MyNAS ISO as if you were to install the system.

From the menu, select option 3 to perform the memory test



This will run MemTest86 against your memory on your system



Should there be any issues with the memory, MemTest86 will highlight these against the various tests. it is advisable to run the tests at least twice if testing memory.

Appendix E - Known Issues

The list below details known issues for MyNAS:

Issue ID	Issue Description	Resolution
Issue #0001	<p>When installing or booting MyNAS, the following message is briefly displayed:</p> <pre>Problem loading in-kernel X.509 certificate</pre>	<p>This message indicates that the date and time of your system is not properly configured. To resolve this issue:</p> <ol style="list-style-type: none">1. Reboot the system and configure the correct date and time for your location in the system BIOS2. Install MyNAS3. Configure the correct timezone, date and time for your location inside MyNAS
Issue #0002	<p>When installing or booting MyNAS, the following message is briefly displayed:</p> <pre>Failed to access perfctr msr (MSR c1 is 0)</pre>	<p>This message is advising that the CPU on which you are currently installing does not support performance counters.</p> <p>It is safe to ignore this message.</p> <p>Note: This message is also typically displayed when running MyNAS within a virtual environment such as VMware.</p>